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CANADIAN GEOGRAPHICAL JOURNAL

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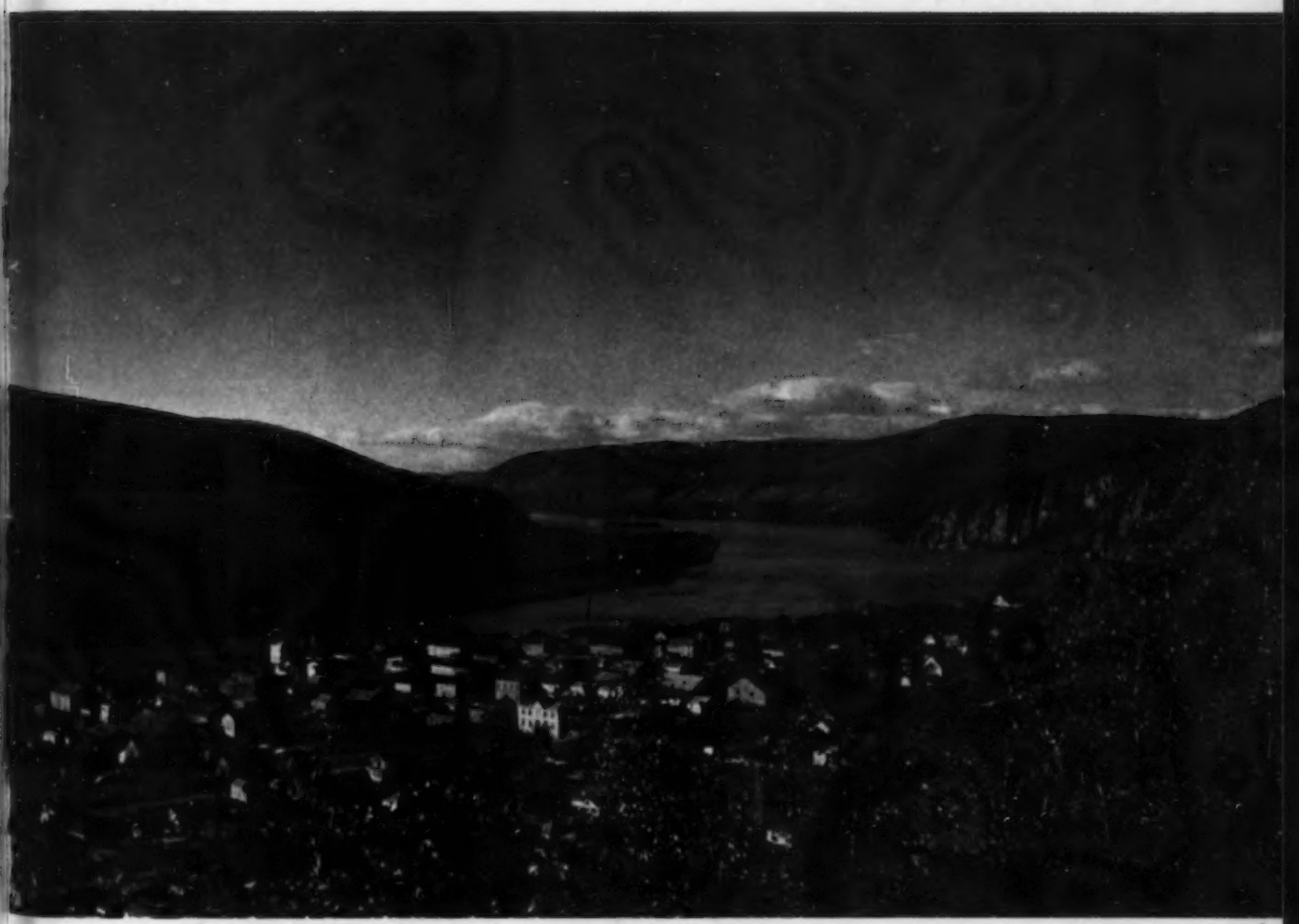

Dawson, Y.T. Adelaide Leitch

Dawson, on the east bank of the Yukon River, is the capital city of Yukon Territory, though it is second in size to Whitehorse. It is the centre for operations in the Klondike gold-fields and in the boom days its inhabitants numbered about 25,000; now there are only about 1,000. The settlement was named after Dr. George M. Dawson of the Geological Survey of Canada who explored many of the Yukon rivers in 1887.

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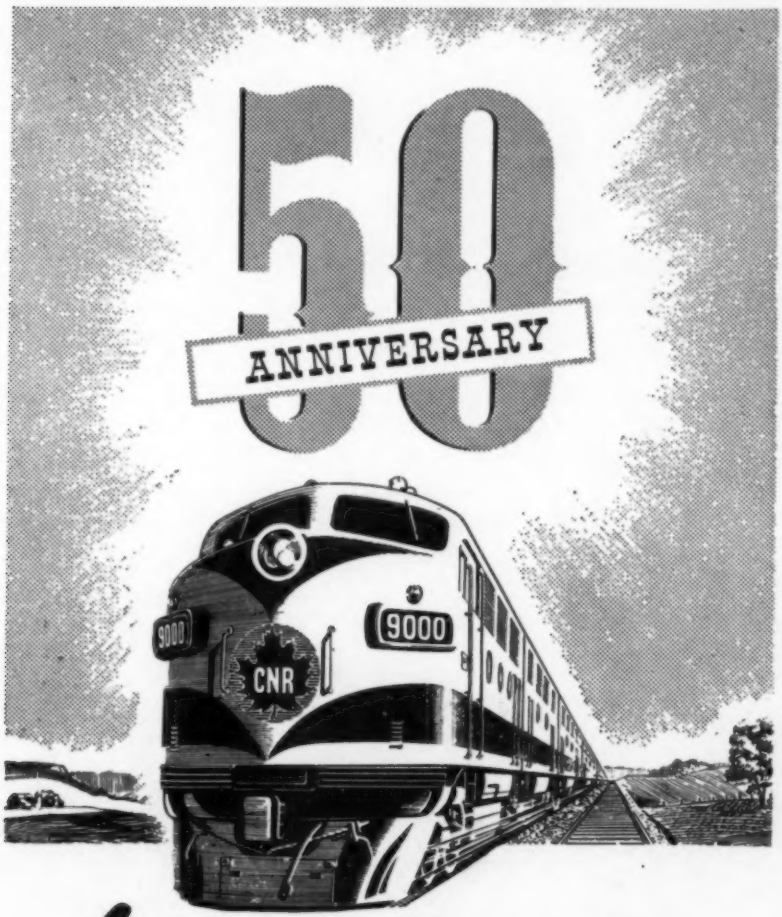

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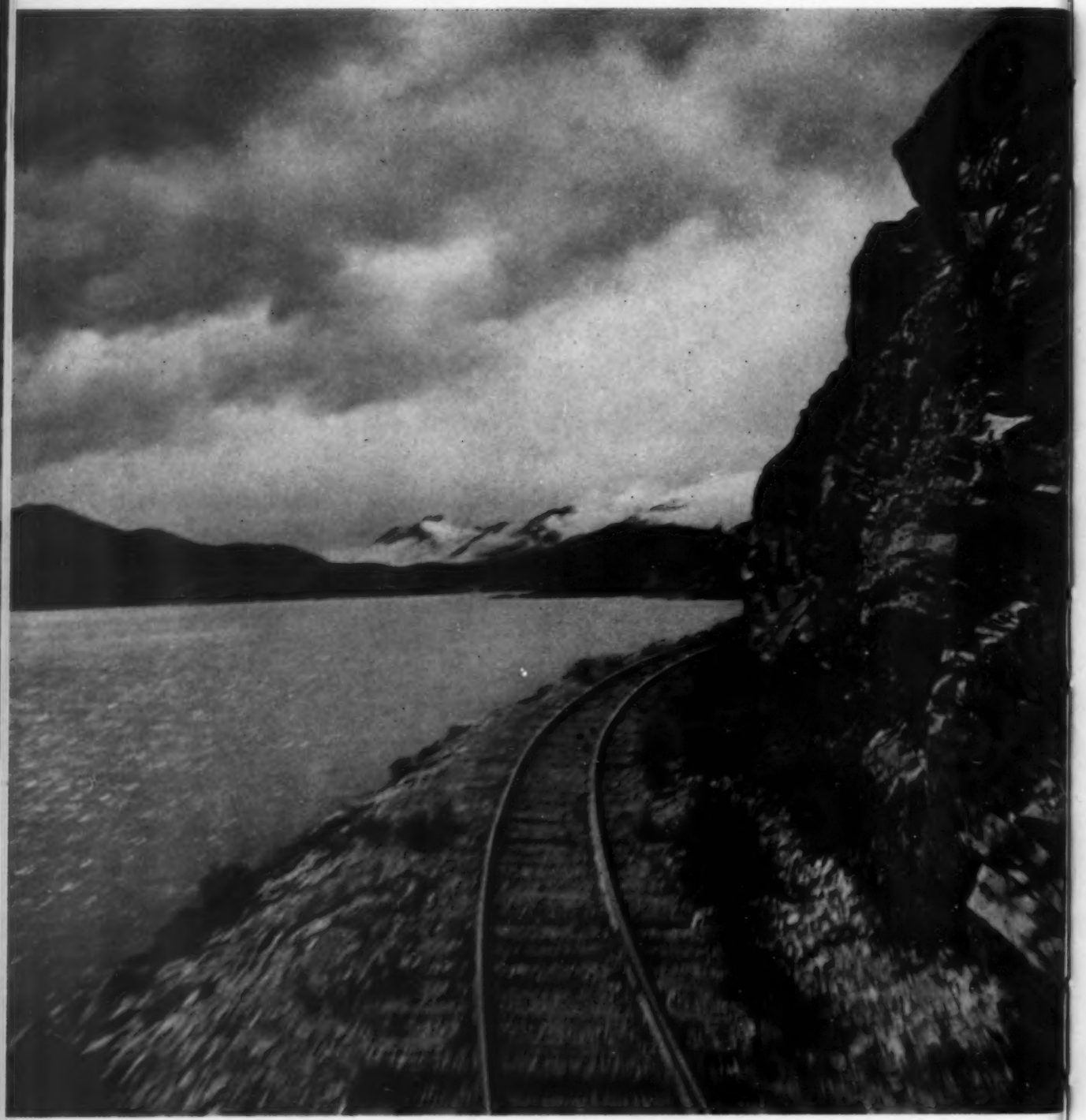

G. M. Dallyn

Narrow-gauge lines of the White Pass and Yukon Railway skirt the eastern shore of Lake Bennett between the seaport of Skagway, Alaska and Whitehorse, Yukon Territory. Lake Bennett lies partly in British Columbia and partly in the Yukon.

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The articles in this Journal are indexed in the *Canadian Index* which may be found in any public library.

The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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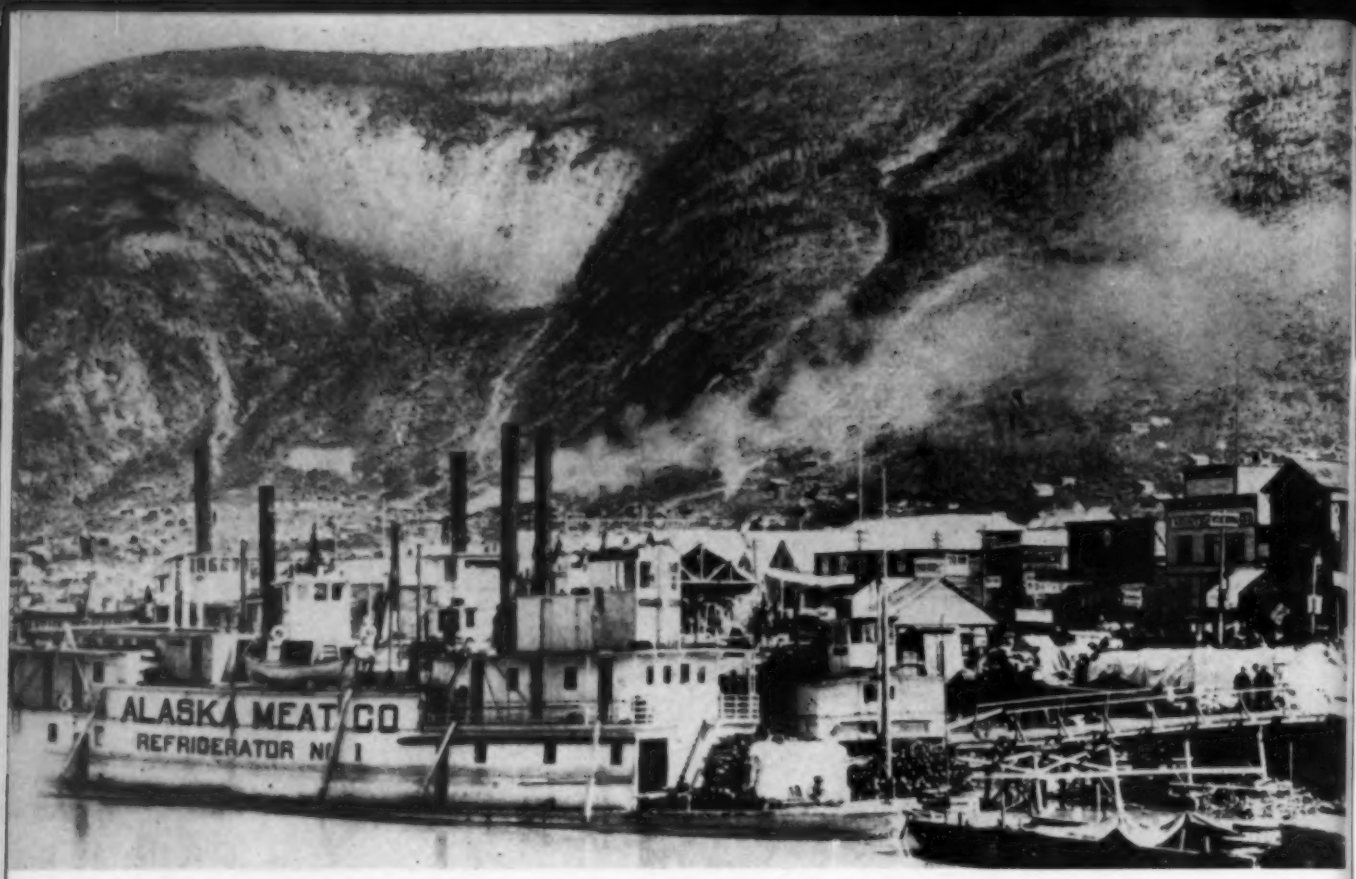


National Museum *Dawson City, capital of Yukon Territory, in 1902.*

Yukon Territory

by DOUGLAS LEECHMAN

YUKON Territory occupies the extreme northwestern part of Canada. Bounded on the north by the Arctic Ocean, on the east by Mackenzie District of the Northwest Territories, on the south by British Columbia, and on the west by Alaska, it has an estimated area of 207,000 square miles, about twenty-four of them for each of its 8,641 inhabitants: 7,141 whites, 1,447 Indians, and 53 Eskimos in November 1949.

In the Beginning

Fur and gold. All through the history of the northern regions of the world, these two, gold and fur have been the magnets which drew men on. It is the fur-trading Hudson's Bay Company that we have to thank for much of the exploration of the Yukon.

In the early spring of 1838, Robert Campbell had established a post for the Company at Dease Lake in British Columbia. From here Indian trails ran to the north and west and, in 1840 when he was in charge at Fort Halkett, he received instructions to go back to Dease Lake and follow the trail northwards to see what lay in that direction. His route lay along a tributary of the Liard, which he named the Frances, and at the head of which he found a large lake; to it he gave the same name. Continuing his way over the divide, he discovered a great river running towards the west, and he named it the Pelly. Here he and his companions built a raft on which they drifted a few miles downstream and then returned to Fort Halkett.

The next year, 1841, he established a fur-trading post on Frances Lake and in the winter of 1842 he put up some buildings at Pelly Banks. In 1843 he travelled down the Pelly as far as its junction with the Lewes,

but it was not till 1850, just a hundred years ago, that he went on farther downstream to Fort Yukon which had been built in 1843 at the confluence of the Yukon and the Porcupine.

In June 1848 Campbell had built a post which he named Fort Selkirk, where the Pelly and the Lewes meet, but it was destroyed only four years later by a band of Thlingit Indians from the coast who resented this interference with their trade among the natives of the interior. After many years the Hudson's Bay Company returned to old Fort Selkirk in 1938.

While Campbell was engaged with these projects in the southern Yukon, another Hudson's Bay man, John Bell, was exploring much farther north. In 1842 he crossed the divide between the lower Mackenzie and the Porcupine. He followed the Bell River, so named in his honour, and went on down the Porcupine to its confluence with the Yukon, on the north bank of which, three miles upstream, Fort Yukon was built in the following year. It was not until Campbell reached there by water that it was seen that the Lewes and the Yukon (or Pelly as Campbell had called it) were all the same stream.

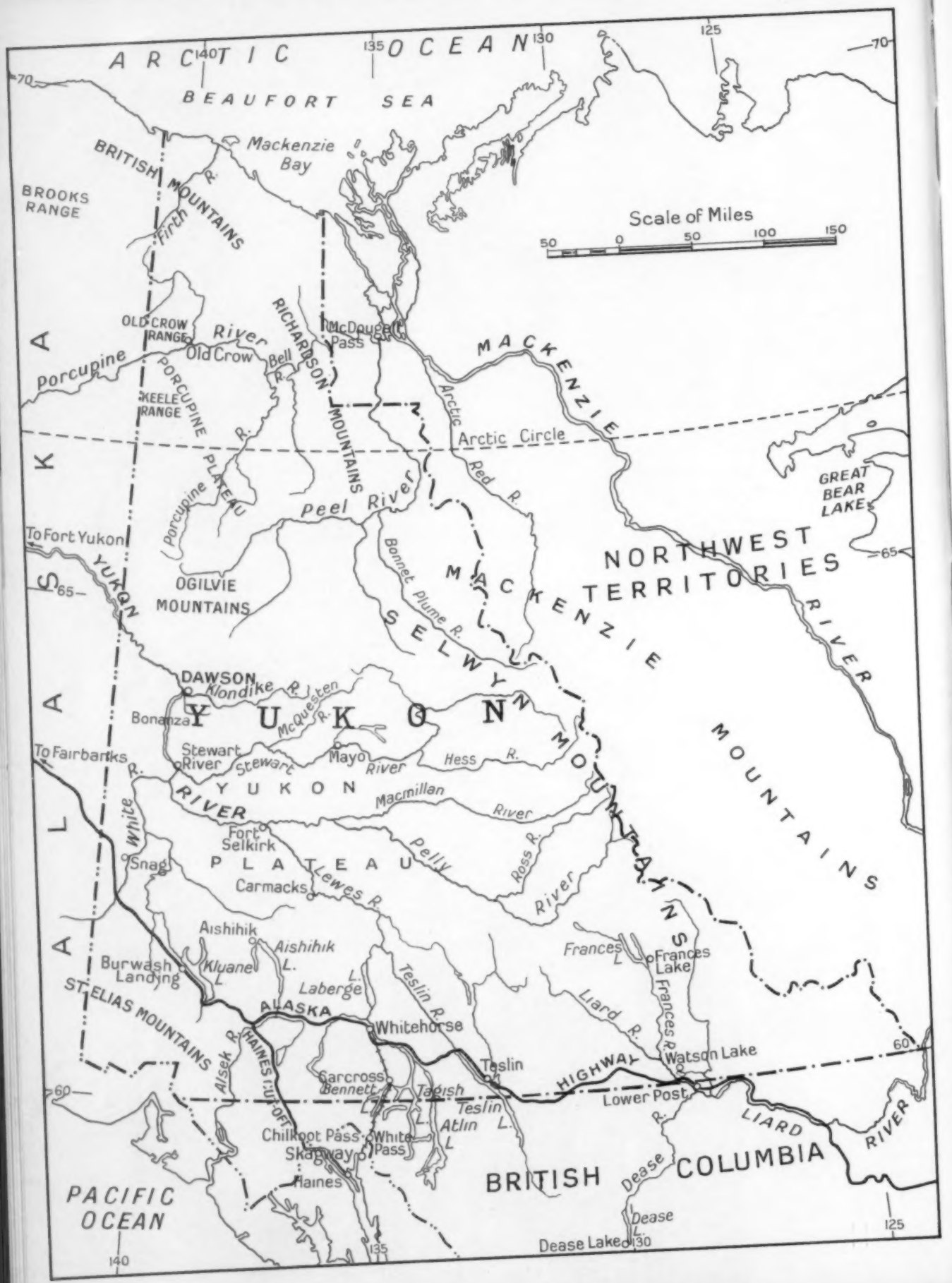
Although Russia had been exploring and exploiting Alaska since its discovery in 1741, few efforts had been made to penetrate deep into the interior. Even as late as 1838, Nulato, six hundred miles west of the 141st meridian which divides the Yukon from Alaska, was as far inland as they had gone, only 300 miles from Bering Sea.

When the boundary was determined, after the purchase of Alaska from Russia in 1867 by the United States for $7,200,000, the Hudson's Bay post at Fort Yukon was found to be far on the wrong side of the line, and they had to move it up the Porcupine to Old Rampart House. When the final survey went through, it was found that even that was not far enough, and once again the weary old post had to pick up and move farther east, only to be abandoned shortly afterwards.

Though fur was the first incentive, gold was not far behind. That there was gold in the Yukon had been well known for a long time and, in 1864, one of the younger Hudson's Bay clerks at Fort Yukon wrote home to his parents that he had "some thoughts about digging gold. — Should I find gold in paying quantities I may turn gold digger, but this merely as a last resort when I can do no better".

Prospectors first began to arrive in the Yukon in some numbers in 1873, many of them working north from the California strike of 1849, the Caribou gold rush of the 1860's, and the Cassiar fields still farther north. The first group came in over MacDougall Pass and down the Porcupine. The

Any building with one extra room opened as a hotel in the boom days.

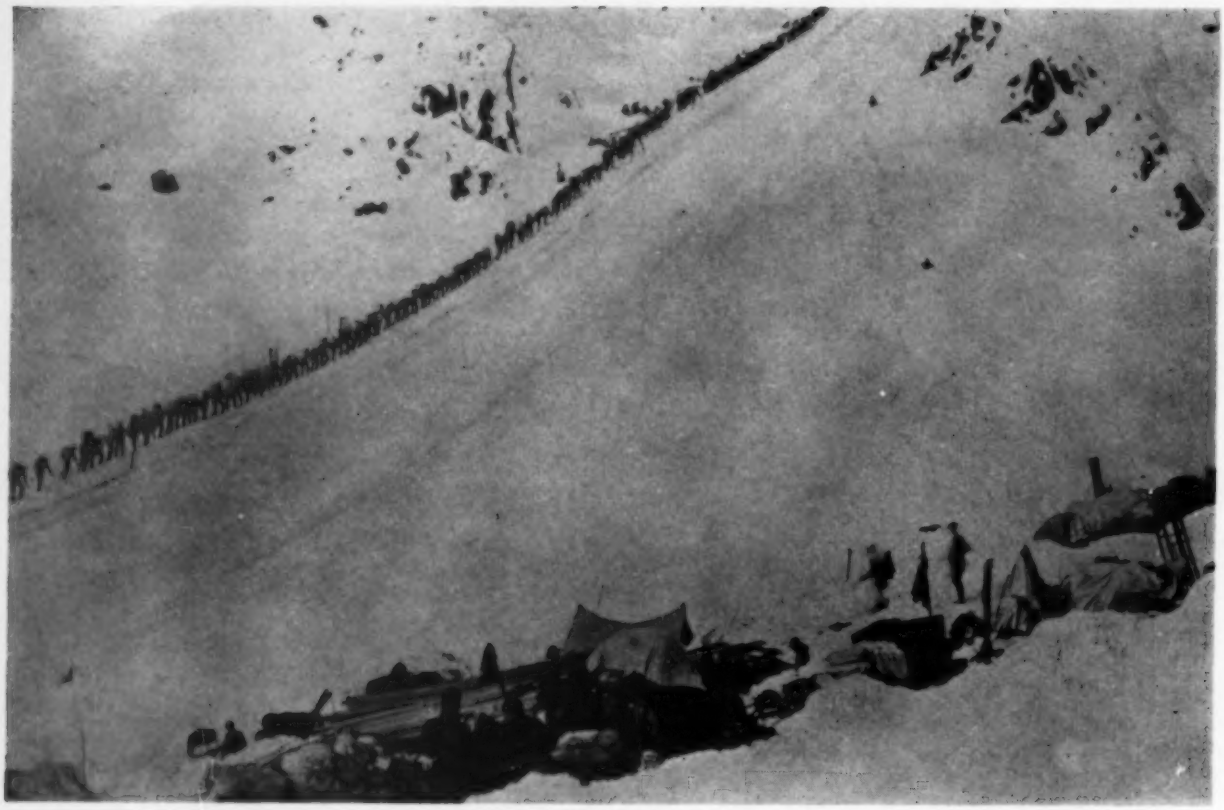

ARCTIC OCEAN
BEAUFORT SEA
Mackenzie Bay
BROOKS RANGE
BRITISH MOUNTAINS
Firth R.
Scale of Miles
50 0 50 100 150
OLD CROW RANGE
Old Crow
Porcupine River
Bell R.
McDougall Pass
RICHARDSON MOUNTAINS
MACKENZIE
KEELE RANGE
PORCUPINE PLATEAU
Arctic Circle
Arctic Red R.
GREAT BEAR LAKE
Peel River
To Fort Yukon
OGILVIE MOUNTAINS
Bonnet Plume R.
NORTHWEST TERRITORIES
MACKENZIE MOUNTAINS
SELWYN MOUNTAINS
RIVER
DAWSON
Klondike R.
McQuesten R.
Bonanza
YUKON
To Fairbanks
Stewart River
Mayo
Hess R.
YUKON RIVER
Macmillan River
White R.
Fort Selkirk
Snag
PLATEAU
Pelly River
Ross R.
Carmacks
Lewes R.
Aishihik
Aishihik L.
Kluane L.
Burwash Landing
Laberge L.
Teslin R.
Frances L.
Frances Lake
Liard R.
Frances R.
ALASKA
ST. ELIAS MOUNTAINS
Whitehorse
Alsek R.
HAINES CUTOFF
Teslin
HIGHWAY
Watson Lake
Sarcross
Bennett L.
Tagish L.
Teslin L.
Atlin L.
Lower Post
LIARD RIVER
Chilkoot Pass
Skagway
White Pass
Haines
BRITISH COLUMBIA
Dease R.
Dease L.
Dease Lake
PACIFIC OCEAN
70
65
60
140
135
130
125

Fort Yukon, 1866. The old Hudson's Bay Company post has completely disappeared.

first group to arrive from the south crossed the Chilkoot Pass in 1878. More and more placer deposits were discovered and trading posts, which previously had dealt chiefly in furs, now began to carry supplies for miners, of whom there were several hundred in the Yukon by 1885. Coarse gold was found in the Fortymile area in 1886 and, on August 17th, 1896, the famous Klondike strike was made on Bonanza Creek by George Carmack and two Indians, "Skookum" Jim and "Tagish" Charlie.

Communication with the outside world was slow in those days, and it was long till the news reached civilization, so that miners already on the spot or nearby had ample opportunity to stake all the good ground long before the "Gold Rush" crowds arrived.

Dawson City in 1900. Looking towards the Klondike River.



The Chilkoot Pass in May, 1898. This was the most popular route to the Klondike.

Thousands of gold seekers, most of them with no experience at all of mining or even of travelling in rough country, poured in by half a dozen routes. Many books have been devoted to tales of their heroism and their foolhardiness, their incredible determination and their equally incredible ineptitude.

Dawson City, already established as a trading post at the junction of the Klondike and Yukon Rivers, sprang suddenly into importance, and there it still stands, in many ways unchanged from its condition at the heyday of its glory. From 1897 to 1904, it is estimated that over a hundred million dollars in gold was washed out of the gravels of the famous gold field, and nearly as much again from 1904 till now. Gradually the accessible deposits were exhausted and the miners drifted off in search of other fields, leaving the Klondike to the huge dredges which operate there today, extracting gold from gravels far too poor in values to pay a man to work them by hand in the wasteful manner of '98.

The Land itself

The Yukon is a land of great beauty, of endless hills, of high mountains laced by tumultuous streams, and of wide open valleys cut by meandering rivers. In the north there are vast stretches of open tundra, soaking wet and almost impassable. Other areas are covered by dense forests which rise to alpine slopes and grasslands, and sweep on up to steep rocky screes and glaciers.

The general trend of the mountain ranges is from southeast to west, following the mainland mass itself as it swings into Alaska. In the north, the British Mountains, a continuation of the Brooks Range in Alaska, separate the drainage of the Porcupine River from the Arctic Ocean, while the Richardson Mountains rise between the Porcupine and Mackenzie drainages. Farther south, towards the central part of the Territory, the Ogilvie Range forms the watershed between the Peel and Yukon systems, with the Selwyn Mountains feed-

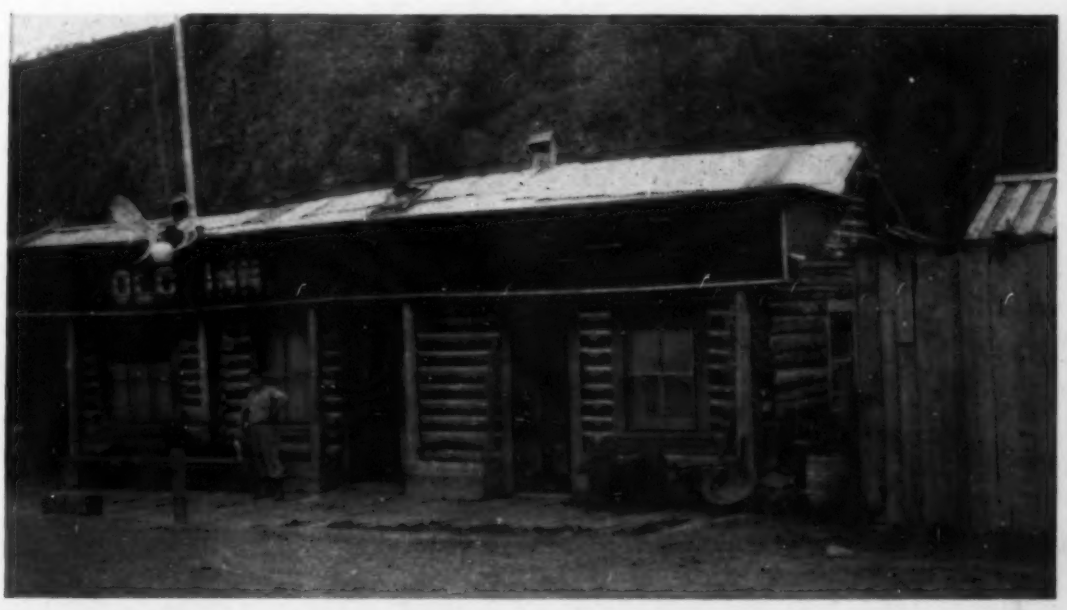
P. Allen

The ruins of Klondike City, across the river from Dawson. The foreground is a potato patch.

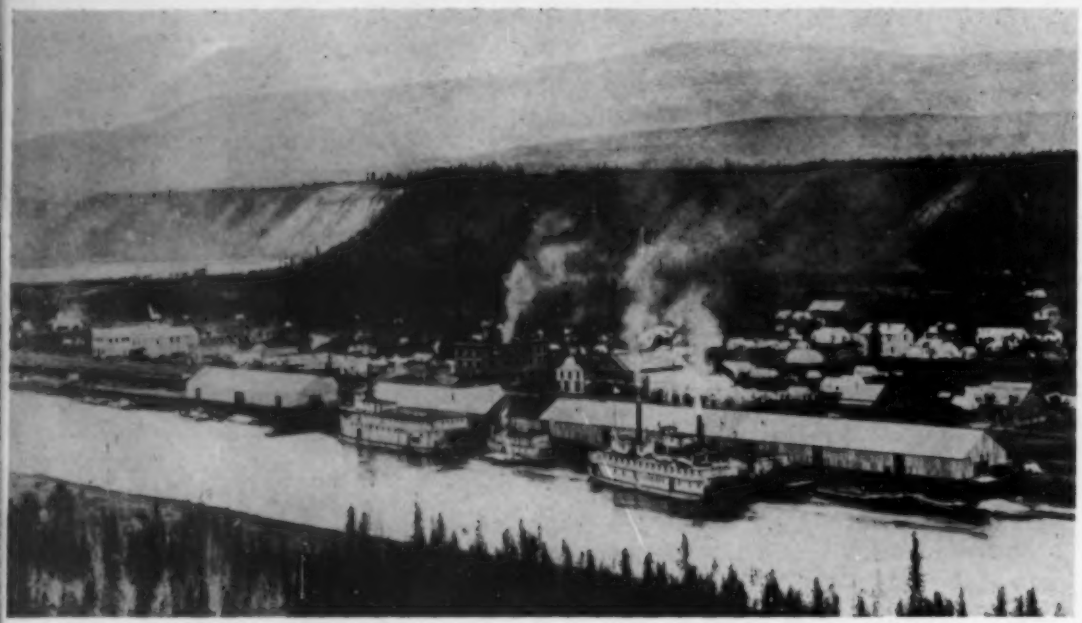
ing the eastern tributaries of the latter, and the Liard Plains draining to the Mackenzie.

In the southwest lies the great St. Elias Range, a continuation of the mountain chain which forms the islands off the coast of British Columbia and southern Alaska. Here are some of the highest peaks in North America, including Mount St. Elias (18,008 feet) and Mount Logan (19,850), surpassed only by Mount McKinley in central Alaska which rises to a height of 20,300.

The geology of the Yukon is complex and presents an almost endless series of fascinating problems. The great central Yukon Plateau lies on a foundation of crystalline rocks, largely metamorphic, of Precambrian



The Old Inn, on the Klondike River at the mouth of Bonanza Creek, as it was in 1922.



Whitehorse after the completion of the railway in 1900. The name of this section of the Yukon River, long known as the Lewes, has been changed officially by the Canadian Board on Geographical Names to the Yukon.

and Palaeozoic ages, with Mesozoic and Tertiary lavas and sediments scattered in patches on its surface. The peaks of the St. Elias Range are reported to be of granitic rocks while the front ranges, to the northeast along Kluane Lake and the Alaska Highway west of it, are of Palaeozoic and Mesozoic ages.

In the northeast, the Selwyn Mountains are an assemblage of Precambrian, Palaeozoic, and Mesozoic rocks intricately folded and faulted, and studded with scattered granite intrusions.

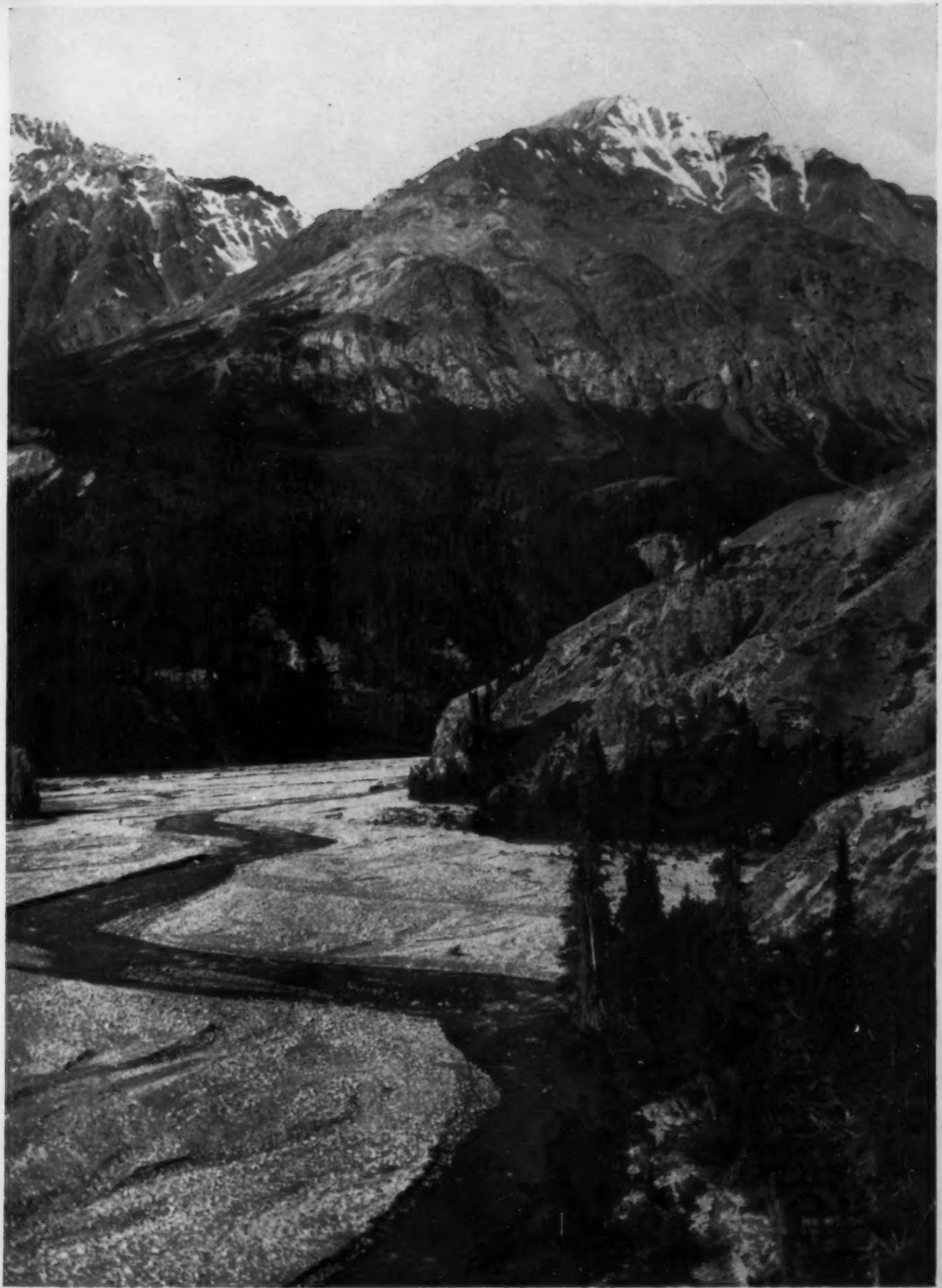
The Richardson Mountains, in the north, are composed of rocks of Palaeozoic and Mesozoic ages; the Old Crow Range is of Palaeozoic and, possibly, Precambrian rocks. The Porcupine Plateau, the broadest hollow in the Territory, is surrounded by a series of mountain ranges, the Richardsons, the British, the Keeles, and the Ogilvies. It is covered by flat Mesozoic sedimentary rocks, with basins of Tertiary rocks in the lowest parts.

Four main drainage basins divide the area. In the southeast, the Liard and its tributaries flow to the Mackenzie. The southern part of the Territory is drained mainly by the Yukon River. North of its basin lies that of the Peel, flowing into the Mackenzie and, again to the north, is found the basin of the Porcupine, a tributary of the Yukon. All the waters of the Yukon Territory, therefore, with the two exceptions of the Alsek in the southwest which runs to the Pacific, and the Firth and other parallel rivers in the northwest corner running into the Arctic Ocean, drain either into the Yukon or into the Mackenzie.

The Yukon Plateau, drained by the Yukon River and its many tributaries, is the best-known part of the Territory. In it lies every town or village of importance, with the exceptions of Old Crow in the far northwest and Watson Lake in the southeast. This plateau has an average elevation of about four thousand feet above sea level, with a base level for its rivers which varies from 1,000 to 2,500 feet. It is cut by a series of deep and more or less parallel trenches trending from southeast to northwest, similar in structure to the Rocky Mountain Trench of British Columbia.

The Yukon, one of the great navigable rivers of the world, has played and still does play a vital part in the development of the country. Its name is derived from the native language, *duik* meaning a river, with the suffix *on*, or great. This word *duik* is found in several stream names, such as Klondike, originally *thlon-duik* or thundering river.

The Yukon, then, is the "great river" and well it deserves its name. Rising in the



Bullion Creek, once rich placer ground, now almost deserted. Douglas Leechman

National Museum

Kluane Lake with the Donjek Range in the background.

southern part of the Territory, only about twenty-five miles from tidewater at Skagway, it is navigable for large river steamers from Whitehorse, a hundred and ten miles north of the Pacific coast, right down to its mouth in Bering Sea, a total distance of two thousand miles and more.

The actual volume of water carried by the Yukon is less than one might expect, for much of the area through which it runs is semi-arid and the precipitation, in both summer and winter, is small. This condition extended back into the Pleistocene Era with the result that the western part of the

Lake Bennett on the White Pass Railway looking to the north.
G. M. Dallyn

Striation Point on the Big Arm of Kluane Lake, showing glacial grooving. Douglas Leechman

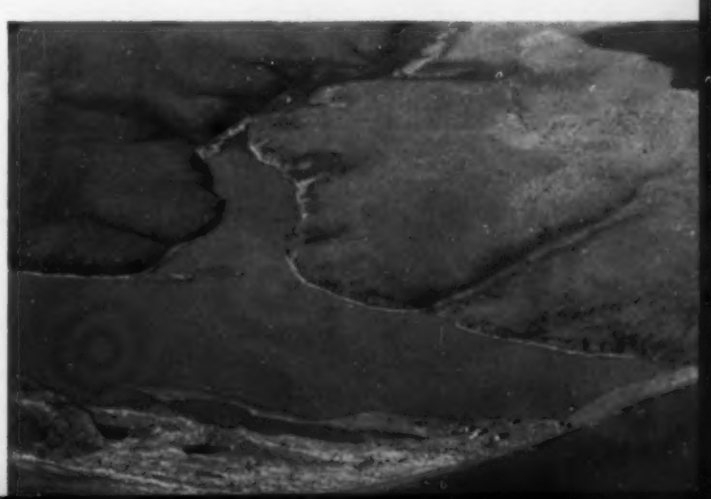
Yukon and central Alaska never were glaciated, for the winter snowfall never exceeded the summer's melt.

A feature of the southern part of the Yukon Territory which gives it much of its charm is the intricate system of beautiful lakes affording over a thousand miles of continuous waterways through magnificent scenery.

Hot or Cold, Wet or Dry

The one thing about the climate of the Yukon that can be counted on is its variability. This is owing to its geographical position, with the warm Pacific Ocean at the south and the cold Arctic Ocean at the north. If large air masses move from north to south, the temperature will drop, and the reverse is true when the warm Pacific air moves inland, northwards. Some winters have average temperatures of 40° or 50° F. below in February, usually the coldest month, but other years may show an average well above zero.

The lowest thermometer reading officially recognized was recorded in Snag on February 3rd, 1947. It was 81.4° F. below zero; the gradations on the thermometer stopped there, but the alcohol stood well below the bottom mark and local people still insist that it was really 83 below. The highest record was made in Dawson, 95 above.



Abandoned trading post and mission at Shingle Point on the Arctic coast in 1943. Since then the tides have washed the spit away.
Dept. Mines and Resources

Bell River, near the summit of MacDougall Pass. Good beaver and muskrat country.

P. Allen

The portage between lakes over MacDougall Pass. The canoe slides over the wet muskeg.

P. Allen

S.S. Whitehorse *in the Five Finger Rapids, winding her way up by means of a cable.*

C.P.R.

Caribou swimming across the Yukon River.

The early summer is a delightful season, with long hours of sunlight, warm days and cool nights. In June, Dawson has nearly twenty-four hours of daylight and in Whitehorse, farther south, there are about twenty. In the winter, this is reduced to five or six hours. Though killing frosts are possible in any month, they are rare from mid-June to mid-August.

Precipitation varies from nine to thirteen inches in a year; a third or perhaps half of this will be rain, most of which comes in the four summer months. Snow is seldom seen then, but even in July a cold day and a bitter wind may bring a short flurry.

The Beasts of the Field

Animal life in the Yukon is scarce compared with more southern latitudes, for the winter is long and the food supply during this period is not at all plentiful. In some localities, where the snowfall is light, game is comparatively abundant, but large animals are no more conspicuous here than in other less remote parts of Canada; people have lived for many years in Whitehorse or Dawson without ever seeing a moose or a bear. Prospectors who live off the country, and trappers who depend on wild game for their meat are the people most familiar with the big game of the Territory.

Among the large mammals are the black and grizzly bears, wolf, moose, caribou, mountain sheep, and goat. The smaller fur-bearing animals include the beaver, muskrat, weasel (ermine), mink, marten, fisher, otter, lynx, and fox. There are also other animals of less economic importance, such as the snowshoe "rabbit" or hare, the porcupine, and the ground squirrel, all of which are sometimes used as food, principally by the Indians.

Two species of whale, and four kinds of seal, as well as the walrus and the polar bear, are found on the short Arctic coast of the Yukon, but are of little concern to its inhabitants. In prehistoric times there were large numbers of elephants (mammoths and mastodons), as well as other animals now extinct; their remains are frequently found in the gold diggings or exposed by the eroding banks of the rivers and along the north coast. The tusks of these vanished elephants are used extensively in the local manufacture of souvenirs for tourists.

The Birds of the Air

Birds are usually more conspicuous than mammals and no visitor to the Yukon can fail to note the variety of birds to be found there. The sportsman will find four kinds of grouse and three of ptarmigan, eleven different ducks and a number of shore birds, as well as geese and swans, these last being fully protected in all seasons.

There are several birds of prey, including the magnificent golden eagle. These may be seen wheeling and soaring in majestic circles, often in pairs, and so high as to be barely distinguishable. Hawks, and owls, and many smaller birds abound. The big

Young eagle, soaking wet and furious! National Museum

National Museum *Up to about 4,000 feet elevation, the forest covers the hills with a green mantle.*

black raven is often seen and even more frequently heard, a whole family of them travelling together and crying hoarsely to each other as they flap rather awkwardly along, through the tree tops.

Fish in the Waters

Fishing is good in the Yukon. There are at least five species of salmon which come up the Alsek River, and two sorts ascend the Yukon and its tributaries, reaching far up the Porcupine River even to Old Crow and beyond. The fish in the lakes are often of great size, especially the lake trout. In the summer of 1946, three of these fish sufficed to feed the entire staff of the airport at Aishihik, about sixteen men, and leave enough over to send on to Snag for the mess there. Rainbow trout, Dolly Varden, grayling, and whitefish, as well as a number of other fish may be taken in streams easily reached from the Alaska Highway.

The Forest

Most of the south and central part of the Yukon, below an elevation of 4,000 feet, is covered by a broken mantle of spruce, similar to the taiga of Siberia. Both white and black spruce are found, as well as lodgepole pine. In favourable locations there are large stands of trembling aspen and balsam poplar, as well as occasional birches.

It is only in the lower valleys that any of these trees grow large enough to be useful for timber, but nearly all the wood for the construction of the smaller bridges and trestles on the Alaska Highway was cut on the spot. Even before the Gold Rush of '98, much of the timber large enough to be used for boat building had already been cut at the heads of the river routes to the goldfields and today dead stumps may be seen covering many acres along the shores of Lake Bennett. Most of the early buildings in the Yukon, whether of logs or sawn lumber, were built with local materials.

A great deal of wood is used as fuel, in houses, and on the river steamers which consume enormous quantities. A boat burns about 150 cords in making the trip from Whitehorse to Dawson and back, nearly a thousand miles. Most of this is cut by Indians and sold to contractors who, in their turn, sell the wood to the steamboat companies. In Old Crow, wood for domestic use costs $35 a cord and the Indians are reluctant to cut it even at that price.

In the autumn, that is about the end of August and the beginning of September, the Yukon countryside takes on a richness of colour that is hard to imagine unless one has seen it. The coniferous trees show little change, but the poplars turn to a deep

yellow, shading to a salmon tint at times, which glows against the dark spruces like flames running up the mountain side. The smaller shrubs assume rich crimsons and purples and cover the slopes in great fields many acres in extent, till a whole wide-flung valley will glow with the rich warm colours of an Oriental rug.

The Flowers of the Field

One thinks of the sub-arctic as harsh and cold, with flowers as almost the last thing that one might expect to find there. As a matter of fact the Yukon is a paradise for the botanist and the gardener. As soon as the sun melts the snow in spring, wild flowers appear and, encouraged by the long arctic days, they bloom in amazing profusion.

The pasque flower, much beloved by Yukoners, is the first to show itself and finding the delicate flowers pushing through the snow is a sure sign that spring has really come. The list of wild flowers, some of them old friends, others less familiar, is a long one and includes orchids of half a dozen species (one of them a beautiful creamy white); anemones, yellow potentilla, marsh marigold, pond lilies, pyrola or shin-leaf, penstemon, columbine, monkshood, harebell, rose, the delicate twin-flower, mertensia in great mauve masses are all abundant.

On the higher levels are many alpine varieties, such as avens and campion, while areas which have been burnt over or cleared of forest cover are soon thick with fireweed. Along both sides of the Alaska Highway, sometimes for miles on end, its glorious magenta colour brightens the early autumn, a sight never to be forgotten.

The People

The Yukon lies on the direct route of migration which primitive man followed when moving from Asia into the Americas. Almost certainly, the crossing by way of Bering Strait was the only one of any importance, and for thousands of years men and women have moved backwards and forwards between the two great continents. This does not imply a land bridge, indeed it is doubtful whether one existed at the time these migrations were taking place.

Archaeological research in the Yukon has revealed primitive stone tools at such a depth below the present surface as to imply an antiquity of several thousand years and it is probable that even earlier deposits will eventually be found, for archaeological research in the southwestern United States has given us good reason to believe that the first people to enter America did so about twenty thousand years ago.

The present native people of the country are Indians and a few Eskimos. The latter live along the arctic coast and are so migratory in their habits as to make it impossible to know how many there actually are in the Yukon at any given moment.

The Indians may be divided into three principal groups. The smallest of these is a little band of Nahanni people, living in the southeast in the area drained by the Liard River. The two larger groups are the coastal Thlingit who occupy the south of the Territory, descendants of people who once lived on the Pacific coast and who made annual trading trips into the interior. Here many of them married women of the inland natives, an Athapaskan people often called Dénés (pronounced day-nay). The local name for them is the "Stick" Indians, a

Lupins thrive in the long days. National Museum

A tablespoon is a fine implement for cleaning fish. These were caught in Teslin Lake.
Douglas Leechman

word from the now-dying Chinook jargon, meaning "forest" people to distinguish them from the coast Indians.

The Athapaskan people occupying the drainage of the Porcupine and Peel Rivers are of the Loucheux tribe, and the other interior Indians are all lumped together, rather loosely, as Kutchin.

Before the coming of the white man, these people depended on hunting and fishing for their livelihood. They used the bow and arrow, as well as many forms of snares and traps, to secure their food. Their clothing was mostly of dressed caribou skin and they ate the meat of this animal and that of almost any others they could obtain, including moose, bear, sheep, goat, and smaller animals as well as fish and birds. Vegetable food was of less importance, but some berries and a few roots were used.

They travelled with the aid of canoes and rafts in summer and toboggans in winter. Packing, both by dogs and on human backs, was a common method of transportation and is still used extensively.

Today there are many half-breed people in the Yukon and the younger generation of Indians and half-breeds tends to depart more and more from Indian customs and language. Old gradnmothers shake their heads ruefully when they admit that many of the younger children can barely speak or understand their mother tongue.

Law and Order

In the early days, before the Territory was organized, various government officials whose duties took them to the Yukon were called upon to act as agents of the Dominion in many matters not ordinarily their sphere. Notable among them was William Ogilvie of the Department of the Interior who was engaged in fixing the boundary line on the 141st meridian and who was referred to so frequently to render decisions concerning the rights of miners and other matters that he was eventually made Commissioner, a position which he filled with notable wisdom and ability.

Today, for administrative purposes, the Yukon Territory is divided into three electoral districts, Dawson, Mayo, and Whitehorse. Each of these three elects a member to the Legislative Council, which sits under the Commissioner who is stationed at Dawson, the capital, and who represents the Department of Resources and Development which is responsible for the general administration.

The Commissioner in Council has the power to make ordinances dealing with such local matters as education, taxes, liquor sales, justice, prisons, game regulations, licenses, the incorporation of companies, and marriages.

The Royal Canadian Mounted Police, with an Inspector at Whitehorse, and

Fish wheels and nets are used to catch the salmon, which are then hung on racks to dry.
P. Allen

detachments at Old Crow, Dawson, Mayo, Fort Selkirk, Haines Junction, Teslin, and Watson Lake, are responsible for law enforcement, and their reputation for efficiency and courteous firmness is well maintained.

There are three mining districts, Dawson, Mayo, and Whitehorse, with a resident Mining Recorder in each. He acts also as timber and land agent.

The Yukon was granted the right, in 1902, to send a Member of to the House of Commons, the first representative being J. H. Ross. He was followed by Dr. Arthur Thompson and later by Capt. George Black, K.C., long Speaker of the House, whose career has been a most distinguished one. In 1947 the electoral district was enlarged to include the Mackenzie River district of the Northwest Territories and is now known as Yukon — Mackenzie River. The first member elected to represent the newly enlarged constituency is J. Aubrey Simmons of Whitehorse.

An Indian Superintendent, resident at Whitehorse, is responsible for the well-being of the Indians in the Territory. He makes it his business to keep in touch with the many native settlements, to know the people themselves as individuals, and to see to it that they are neither victims nor predators.

Health and Happiness

There are three hospitals and four general practitioners in the Yukon, at Dawson, Mayo, and Whitehorse, and there are also medical staff and facilities attached to the

The old N.W.M. Police barracks at Dawson. Sixty men were posted here in gold rush days, now only a few R.C.M.P.
P. Allen

armed services stationed there. The hospitals are modern and well-equipped, with qualified nursing staffs, excellent operating rooms, and x-ray apparatus.

There are schools for white and half-breed children at Whitehorse and Dawson which carry their students to university entrance, and lower grade schools are maintained at various places such as Mayo, Carcross, Brook's Brook, Destruction Bay, Swift River, Teslin, and Watson Lake.

Whitehorse school children have an enviable reputation in spite of their apparent isolation and have won numbers of prizes and scholarships. Examinations are set by the British Columbia Department of Education, and it is their curriculum that has been adopted. For those children who, by reason of the remoteness of their homes, are not able to go to school, correspondence classes are provided by the same Department by arrangement with the authorities in the Yukon.

Schools for native children are operated by the Church of England, the Roman Catholic Church, and the Indian Affairs Branch. At Carcross there is a large residential school, with pupils from as far away as Old Crow, usually arriving by plane. That is the quickest and cheapest way to travel in the Yukon if any distance of more than a few miles is involved.

Sports are popular with everybody, of course, and many of the white residents much prefer the winter with its skiing, skating, and dog-driving, to the summer when baseball, tennis, bathing, and fishing are indulged in.

Ghost Towns and Live Towns

In the old days a tent might be pitched on the shore of a Yukon lake one day, a log

Douglas Leechman

Thlingit Indian girls at a picnic in Teslin.

cabin might appear nearby the next week, and before a fortnight was up several hundred people would have moved into the new town. A year, or ten years, later it might have vanished completely, leaving nothing but a few rotting logs, or it might still survive, even fifty years on, and show signs of continued growth.

Almost every settlement in the Yukon is the result of some such chance occurrence. There might or might not be an Indian camp near; more likely the nucleus round which the nascent settlement clustered would be a trading post or a gold strike, real or imaginary. In just such a way did "Fishwheel" in Alaska spring into existence in October 1949 as the result of a reported "strike", only to vanish a few days later.

Dawson, once the largest town in the Yukon, started as a trading post and grew suddenly and enormously when the gold seekers poured in during 1897 and 1898 after the big strike on Bonanza Creek. Today it is but a shell of its former self and summer sees tourists wandering dazedly through the Floradora Dance Hall, the Nugget, and the Old Opera House where many famous stars played in the old days.

Whitehorse, the largest town today, was born when men camped on the shore a few miles below the treacherous waters of Miles Canyon and the Whitehorse Rapids, and here was the end of steel when the railway from Skagway was built. Now it has a population of four thousand or more and seems to be growing larger every year. Its position on the Alaska Highway, the railway, at the head of river navigation, and at the centre of air transporation has provided the stimulus to expansion.

Carcross, once the leading town of the Yukon, is now a little village on the White Pass Railway at the north end of Lake Bennett. It is the only place on the line,

INDIAN WOMEN OF THE YUKON

Top to bottom:—

Levina Fox of Teslin (Thlingit).

Annie Geddes of Teslin (Thlingit).

Rachel Cadzow of Old Crow (Loucheux).

Douglas Leechman

except the two termini, Whitehorse and Skagway, that has a station agent. Its name is a contraction of Caribou Crossing and at one time the Indians used to gather here to spear the caribou as they swam the narrow passage between Lakes Bennett and Nares. The Indian village occupies the south bank of this stretch of water and archaeological remains suggest that the natives have camped here for many hundreds of years.

Mayo, seldom visited by the tourist, lies nearly two hundred miles east of Dawson, on the Stewart River. It is the centre of an important mining district, where not only placers, but lode mines yielding silver and lead are worked, the concentrates being shipped by steamboat to Whitehorse, by rail to Skagway, and from there by ocean steamers to the smelters.

Old Crow, the most northerly village, is built on the Porcupine River some seventy miles north of the Arctic Circle. Here live about 140 Loucheux Indians who make their living mainly by trapping and who are less influenced by white contacts than are most natives of the Territory.

There are many other villages, some of them picturesque collections of log cabins where one or two old timers and a few Indians live in happy proximity, sharing the

Top left:—
Fur robes are light and warm.

Bottom left:—
Peter Charlie, of Old Crow.

Indian graves at Burw

same pleasures in life and the same little graveyard after death, where modern granite tombstones and miniature wooden houses covering Indian graves stand side by side and nobody ventures to think either of these monuments incongruous. Life in these remote settlements has a charm and a fragrance that is not often captured "outside", a Yukon name for that distant land from which the old timers came but which few of them have any wish to see again.

A Rich Land

Fur and fish, forests and water power, to say nothing of the richest resource of all, the mineral wealth, all add up to an impressive total. The fur trade was the first source of wealth, and even today its annual contribution is about a quarter of a million dollars. Most of this is derived from the trapping of wild animals, for though there are a few small fur farms in the south, they add but little to the receipts.

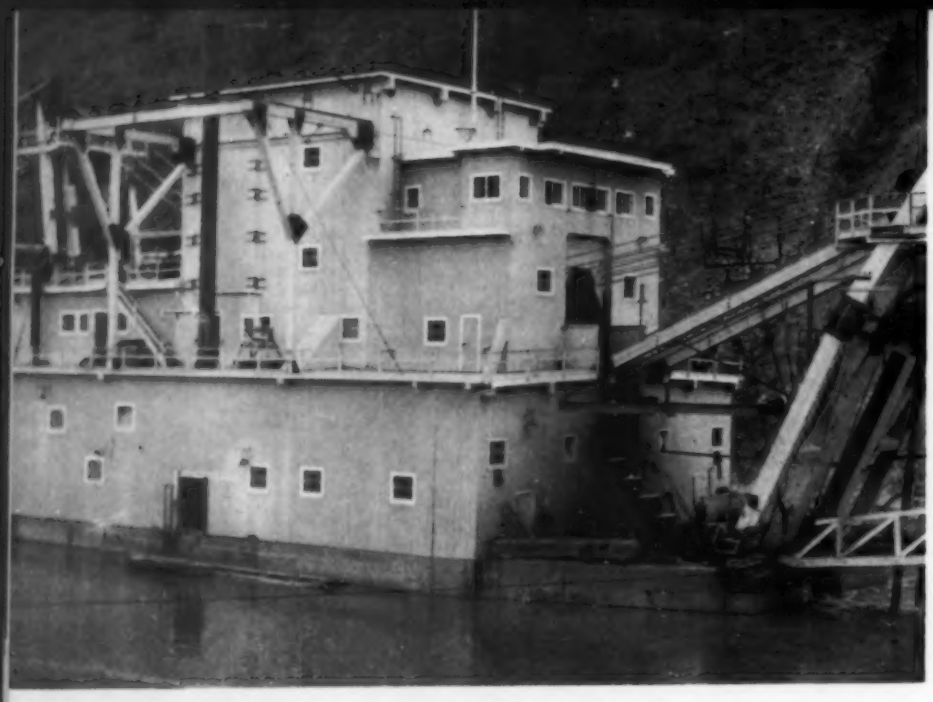
Forestry and fishing are two smaller industries, each capable of considerable expansion. In 1946, sawmills in the Yukon produced goods valued at a little over $20,000; fishing brought in about $3,000 in 1945.

Water power has, so far, been only partially developed. Miles Canyon has often been suggested as a possible source of hydro-

Top right:—
Fishing is good in Teslin Lake.

Bottom right:—
A Thlingit Indian carving on a standing spruce.

ves at *Burwash Landing.* Photographs by Douglas Leechman



Douglas Leechman

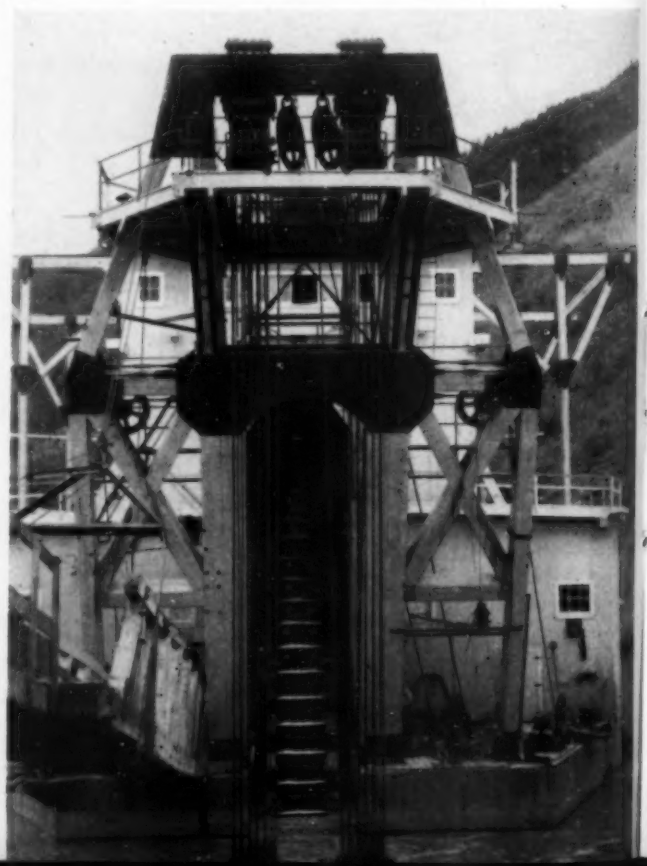
The old way was to wash the grav today huge dredges eat their way extract almost every speck of gold (right) fill the river bed in the wake

electric energy; and a survey was recently made in the area southeast of Whitehorse in connection with a plan to dam the outlet of Marsh Lake. This would raise the water level in an extensive series of lakes providing a very large potential power, with the advantage of being comparatively free from seasonal fluctuation, a serious obstacle in developing power from rivers the flow of which diminishes in winter.

Big game is another of the natural resources of the Territory that brings in revenue, both through the sale of licences and from payment to guides and outfitters. Canadian citizens pay $75 for a hunting licence unless they are residents of the Yukon, in which case the fee is $1. Alien big game hunters pay $100 for a licence. Trapping licences, which are not sold to aliens at all, cost $250 each, but Indians are allowed to hunt and trap without any fee. Non-commercial fishing, during the open season, is permitted to residents on purchase of a $1 licence; for non-residents the fee is $2.

From the Bowels of the Earth

Though mining came second in the history of the Yukon Territory, it is now incomparably first in importance. The long cold winter and the frozen gravels were once considered a hindrance to mining on the river bars and in the creek deposits, but when it was discovered that a man could sink a shaft to bedrock, where most of the placer gold was found, and then "drift" in any direction through the frozen gravel with no need for



The endless chain of huge buckets lifts the gravel to the top of the dredge to be washed and screened.

Douglas Leechman

gravel through sluice boxes but way through the ground and gold from it. Tailing piles wake of gold dredges.

P. Allen

supporting timbers, placer mining was speeded up.

Frozen sand and gravel is much too hard for a man to dig through with a pick and shovel, and it must be thawed first. The old timers did this with fire, which would soften a few inches of the gravel. This was then shovelled out, and a fresh fire built to thaw down a few inches more. Once bedrock was reached, the gold-bearing gravel was brought to the surface, usually by means of a winch, and piled up to await the spring thaw. Then, with plenty of water running in the streams, the gravels won during the winter were washed in sluice boxes armed with riffles that caught the gold.

Such methods allowed a single man or a small crew to make wages and, in good ground, a great deal more. In poor ground, expenses outpaced profits and, ten years after discovery, most of the good ground had been worked out, and the annual production declined. In 1900 over $22,000,000 was recovered, but by 1907 it had dropped to $3,000,000.

It was in 1905 that dredges were first introduced on a large scale, though experiments with small outfits had been tried even as early as 1894. Gravels which were far too poor in gold to repay hand mining methods were fed through these huge and complicated machines. They require a great deal of capital for their construction and operation and the days of "poor man's mining" seem to have gone except for a few isolated patches of rich ground that are found every now and then.

Placer mining, though perhaps the most spectacular, is by no means the only type seen in the Yukon. Lode mining, in which the mineral is won from ore deposited in veins or lodes, is also of great importance, especially in the Mayo district where silver-lead deposits have been worked since 1913. Some of the ore is extremely rich and can be shipped profitably in its raw condition, but the ore of larger bodies requires concentrating to save the waste of carrying unwanted materials to the distant smelters.

Copper deposits in the Whitehorse district have been known since 1897 and for a number of years ore was shipped outside whenever the price of copper was high enough to justify working the mines. Since 1920 they have been closed, though they are believed still to contain a good deal of medium grade ore and some day farther exploration may revive them.

The Wheaton district, a few miles northwest of Carcross, is rich in minerals. Gold, silver-lead, antimony, and copper have been

A two-storey log cabin saves fuel.

Douglas Leechman

Spruce logs are the usu

discovered there but no active mining is being carried on at present.

Native copper, in the form of nuggets, is found in the beds of many streams running into Kluane Lake and westwards to the White River. Most of these nuggets are small but one piece, eight feet long and weighing about three tons, still stands propped up beside a big spruce tree where some prospectors placed it. In aboriginal times the Indians used these nuggets in making arrow heads, knives, and other tools. Examples of this craft are rare now, but many of the older men remember them well.

Tungsten and tin have both been found in limited quantities in Dublin Gulch in the Mayo area and many other showings of less importance are known. Among the non-metallic minerals, coal is the only one of interest at present. There are many known deposits, the best being at Tantalus Butte near Carmacks, where coal was mined steadily during a large part of the first thirty years of this century, production sometimes reaching as much as 10,000 tons a year. The mine was closed in 1935, and re-opened in 1947.

Over Land and Sea

Transportation has always been a vital factor in the Yukon, for without it no modern development could take place. In the early days it was important because of the sheer physical difficulties which surrounded it; today, it is still important, because it is one of the major industries and this area, once so difficult of access, is now easily reached by land, by air, or by water.

Whitehorse airport is one of the largest in the northwest. It is on a bluff high above the town itself.

Dept. Mines and Resources

are the usual building material. G. M. Dallyn P. Allen

Old Crow, the most northerly Yukon village.

Whitehorse, the transportation center of the Yukon, has the White Pass and Yukon Route railway, the Alaska Highway, the Yukon River traffic, several air lines, and both passenger bus lines and truck freight lines. Automobile traffic along the Highway brings hundreds of tourists as well as a great deal of commercial and industrial business every summer, and thousands of other people arrive by plane and train.

The White Pass railway was begun in 1898 and finished in 1900, softening the lot of crowds of late-comers who, had it not been in existence, would have had to climb the long steep trail that the gold-seekers of pre-railway days knew so well.

The section from Skagway to the head of Lake Bennett was the first to be completed, and the northern link, between the foot of the lake and Whitehorse, came next. The twenty-mile gap between the two, along the length of the lake, was bridged by a steamboat service for a few months, so that transportation over the whole distance was possible even before the railway itself was finished.

Steamships have operated on the Yukon River and other streams of the Territory since long before the gold rush, and the whole distance from Whitehorse to the sea is navigable. There are rapids, such as the Five Fingers and the Rink, which have caused the loss of a number of boats and men, but the skilled river pilots know every rock and sand bar and accidents are remarkably few. Navigation on these swift and meandering rivers is not without its hazards and a broken paddle-wheel or rudder is by

Living quarters at the right, a cache built high on posts, and a couple of sheds make up a Yukon domicile.

Douglas Leechman

Dawson, at the confluence of the Klondike and Yukon Rivers, probably had as many as 30,000 people when all these cabins were built.
P. Allen

no means a rare occurrence. Repairs are usually made on the spot and, after a few hours' delay, the boat proceeds, often pushing a barge loaded with freight ahead of it.

These steamers, designed in the late 1890's and but little changed, are well found and comfortably furnished, the meals are excellent and well served, and the trip is one which few tourists forget. Indian villages and little trading posts appear on the banks. Sometimes the boat stops at a remote woodpile to load fuel, now and then an old timer appears on the bank outside his log cabin to catch some scrap of news shouted to him through a megaphone. It is a quiet and peaceful country, of haunting beauty and serenity.

Whitehorse is also the most important station on the Northwest Staging Route, a series of airports connecting Edmonton and Fairbanks. Passenger flights leave here daily, except Sundays, for Vancouver and Edmonton.

Meteorological and radio range posts are maintained at Watson Lake, Teslin, Aishihik, and Snag where permanent crews of the Dominion Meteorological Service and the Royal Canadian Air Force are stationed.

Most important among the road systems of the Yukon is the Alaska Highway. Its length of 1,523 miles stretches from Dawson Creek in British Columbia through the southern Yukon and Alaska as far as Fairbanks. Construction began in March 1942 and in November of the same year, a bare eight months later, the pioneer road was completed, by United States Army Engineers. During 1943, this pioneer road was improved and straightened to make a sturdy military highway for heavy traffic. Some 15,000 men, in addition to those in the U.S. Army, were employed, using heavy modern road-building equipment. The cost has been estimated at $138,000,000. It was, almost certainly, much more.

The Highway followed a line which enabled it to link up the chain of airfields of the Northwest Staging Route which had already been built by the Canadian Government in 1941. These were at Fort St. John and Fort Nelson in British Columbia, and

Boom day hotels are still in use in Dawson.
P. Allen

T. M. Stevenson

Superintendent's residence at Pine Creek agricultural substation. Mount Archibald in background.

at Watson Lake and Whitehorse in the Yukon. Pioneer air transport companies had already constructed smaller landing fields at Whitehorse, Dawson, Mayo, Selkirk, Carmacks, Laberge, and Carcross.

In April 1946 the section of the Alaska Highway in the Yukon and British Columbia was turned over to the Canadian Government and, although traffic over it had to be restricted at first owing to the lack of facilities and accommodation for tourists, it is now open to all. In the summer of 1949, about 700 cars a month drove up the Highway from the south. The Royal Canadian Engineers deserve every credit for the excellent condition of the Canadian section, which is entrusted to their care.

Interesting and important though the Highway is, it was by no means the first in the Yukon, for there was already a system of over five hundred miles of good roads in existence.

Farm and Garden

The Yukon has never suggested that agriculture is one of its leading industries. Suitable soil is scarce, the long cold winter, the permafrost a short distance below the surface which slows growth, and the short season dependably free from killing frosts, combine to limit the variety of crops that can be raised successfully.

Nevertheless, the constant demand for fresh milk and vegetables has encouraged a few people to attempt farming, with considerable success. When the big gold rush was at its height, several thousand acres were cleared and some of the farmers fared a good deal better than did the less successful miners.

Two experimental farms, under the Department of Agriculture, have been established in the Yukon. The first, at Swede Creek, a few miles up river from Dawson, was started in 1917, and closed in 1925 after demonstrating that some field crops such as oats, barley, and even wheat, could generally be matured and that brome grass did best as a fodder crop.

When the Alaska Highway gave easy access to the southern Yukon, the Department of Agriculture ordered a survey of the soils along its route and in the Yukon River valley. A large area of fertile soil was found in the unglaciated, west part of the Territory and a second experimental farm substation was opened in 1946 at Pine Creek, about a hundred miles west of Whitehorse, though not actually in the unglaciated section. Experiments are being conducted, not only with field crops, but also with garden vegetables, small fruits, flowers, and livestock. The supervisor makes periodical

visits to farms and gardens in the Territory to see what progress is being made, to advise in the selection of varieties for growing, and to instruct in the best methods of propagation and culture. It seems that there is no reason why most of the farm and garden produce needed for local use should not eventually be grown on the spot.

Sights and Scenes

So romantic a land as the Yukon or Alaska, (and to many these two are as one), was bound to attract the adventurer, the explorer, and the tourist. Even as early as 1890 tours along the sheltered waters of the Inside Passage were advertised, with Indians, glaciers, and fiords held out as attractions to the visitors. During the period between the two great wars as many as 20,000 people a year travelled over the White Pass railway from Skagway to Whitehorse, and many of these thousands went on as far as Dawson and even to Fairbanks, where they turned south to Seward on the Alaska Railway.

In the days before the railway, a wooden tramway by-passed dangerous Whitehorse Rapids and Miles Canyon.

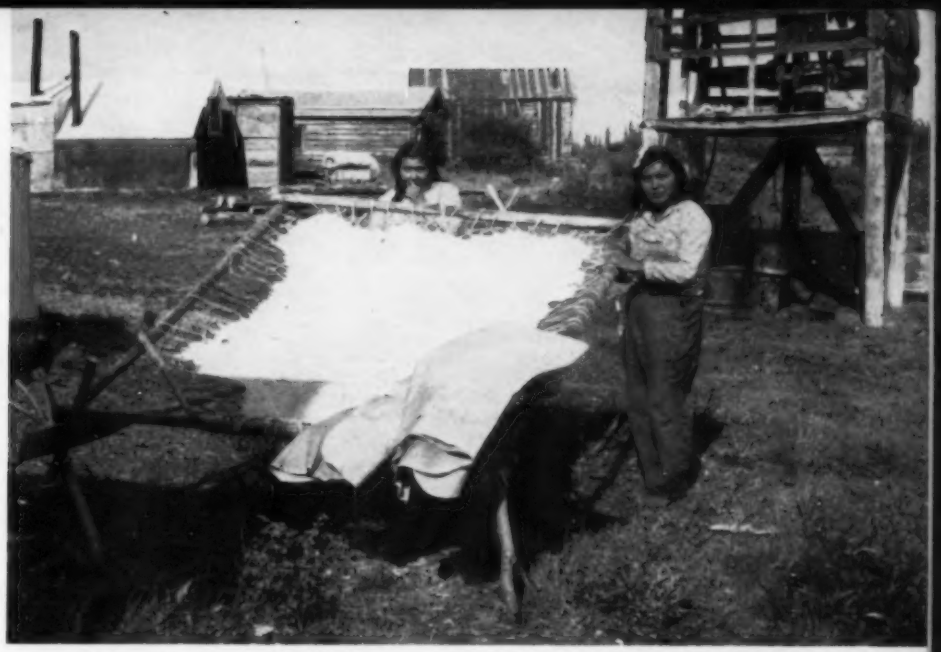
Now that travel facilities have again returned to normal, the yearly flood of tourists is steadily increasing. Most of them arrive by steamship at Skagway and go on by rail to the interior. Others stop at Carcross, where the steamer *Tutshi* (pronounced too shy) traverses Lake Tagish to visit Ben-My-Chree, in British Columbia, once the flower-graced home of a pioneer family, and now a popular tourist resort. No visitor can fail to admire the beautiful gardens, rich with blossoms, so far north of "civilization".

Others go on to Whitehorse, staying overnight at the White Horse Inn or the Regina Hotel, having made their reservations well in advance, and leave the next morning for Skagway where the ship awaits them.

An even smaller group, instead of going back from Whitehorse, continues by river steamer to Dawson, taking two days for the down river trip and a leisurely five for the return upstream.

Many visitors to the Yukon are hardly to be called tourists, for they do not take pre-arranged tours but rather wish to see and explore the country at their own leisure and convenience. Some of these arrive in their own cars, having driven up the Alaska Highway. Gas and repairs, meals and overnight accommodation are available at intervals along the road and one is never more than fifty miles from these facilities. Bus lines operate over the Highway as well as fleets of transport trucks.

Yet other visitors fly their own planes in, and airports are placed within easy reach



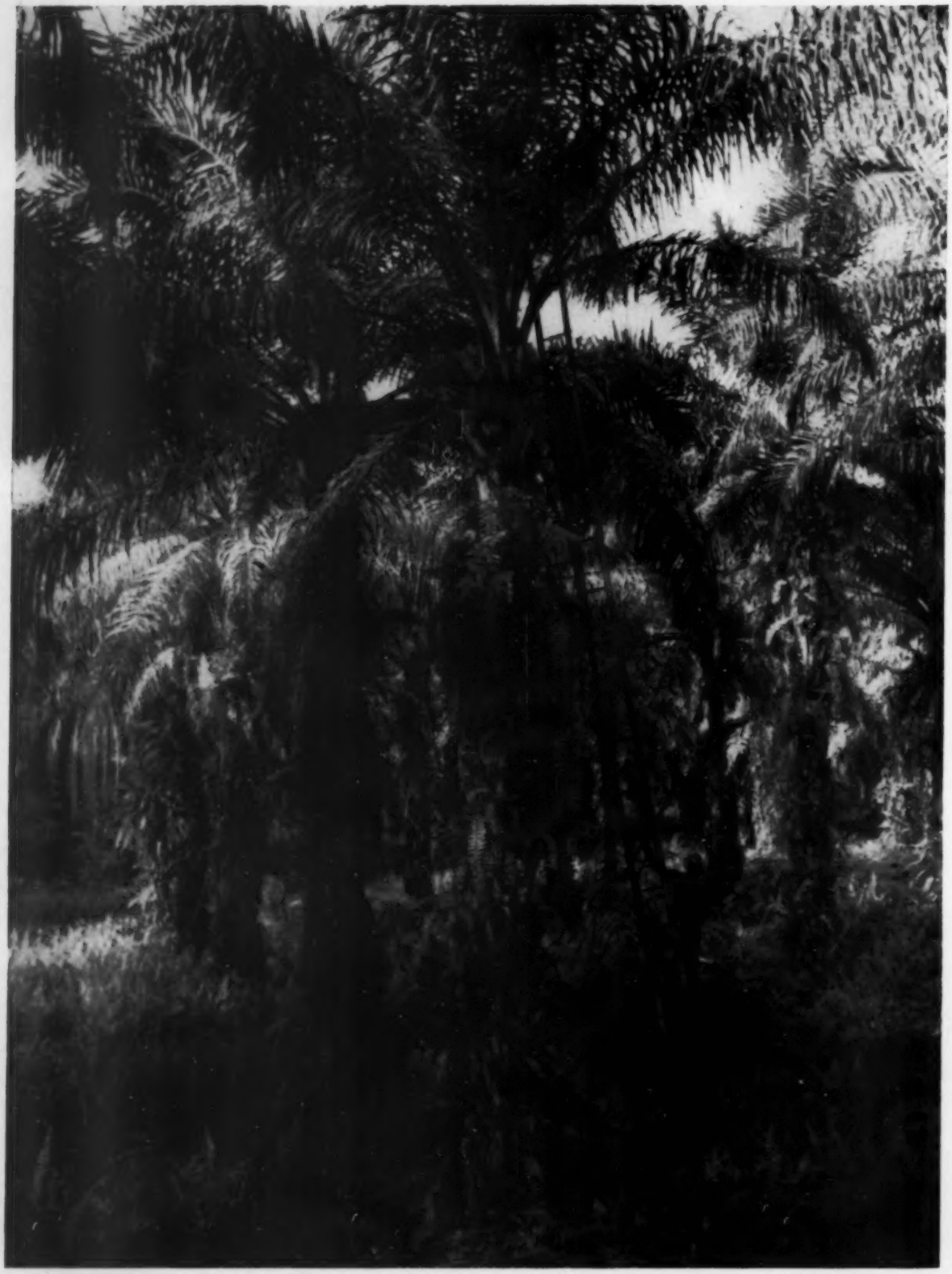
Moose hide has to be stretched on a frame before being scraped and tanned in smoke.
Douglas Leechman

of each other along the Highway and at a few other points, such as Dawson, Carcross, and Atlin, B.C. Private planes should be well equipped and completely air-worthy, for search and rescue are difficult in an area where one may be forced down in dense forest scores of miles from any habitation.

Wherever tourists travel, souvenir stores are to be found, and the Yukon is no exception. Every town along the steamship route going north, and both Whitehorse and Dawson in the interior, are plentifully supplied with them and a large business is transacted every year. Among the most popular souvenirs are pieces of jewellery, locally made, of mammoth ivory and gold nuggets. Pins, bracelets, lockets, ear-rings, and brooches are the most usual articles and they have the merit of being perfectly genuine products of the area, and made by local craftsmen.

Indian-made moccasins, gloves, and jackets of caribou or moose hide are also available, as well as raw furs and Indian baskets.

Making snowshoes is an art learned by both observation and practical experience.
Douglas Leechman



U.K.I.O. photographs.

Malayan Palm Oil

The oil palm (*Elaeis*) is closely allied botanically with the coconut palm. There are two species, one native to South America and the other, the African oil palm (*E. guineensis*), to certain tropical areas of the Old World, principally West Africa, Malaya and the Sunda Islands. The oil palm is a very ornamental tree with a stout, coarsely ringed trunk, bearing at its summit a crown of feathery leaves ten to fifteen feet long. Some idea of the height of a fully grown tree may be gained from comparing the one shown above (on the Guthrie Ula Remis estate at Layang Layang, Johore) with the forty-foot ladder placed against it. The creeper and voracious undergrowth are results of neglect suffered under Japanese occupation.

The amazingly prolific flowers of the oil palm are crowded together on short spadices. A cover is placed over female blossoms to prevent indiscriminate wind pollination; selected pollen is applied (above right) by hand and the sack is then kept closed until seeds begin to form. In due course the great ovate fruit clusters (above left) ripen; these comprise a number of spikes, each bearing several thin-skinned, orange-coloured fruits (drupes). The ripe drupe has a golden fibrous pulp (pericarp) which surrounds from one to three hard-shelled black nuts with oily kernels. Below:—Checking the weight (according to which harvesters are paid) of ripe fruit. About 1,400 bunches (weighing up to 135 lb. each) are required to produce a ton of oil.

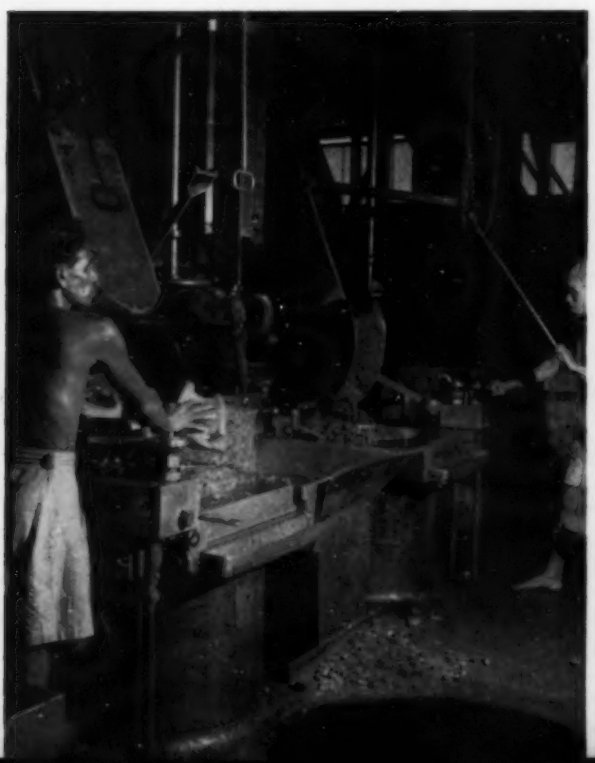
Above:—A view over the Malayan Ula Remis oil-palm estate. Below:—Indian estate labourers' children playing in front of their school building. Palm oil is essentially an estate crop and growers are currently benefiting from the high prices resulting from the acute world shortage of vegetable oils. The oil palm was brought to Singapore from West Africa in 1875 and the first plantation was opened in 1917. At the end of 1948 forty-one estates (out of a total of forty-eight) were in production, with a planted area of 78,904 acres. Reflecting the prospect of continuing favourable prices, and despite the fact that some estates have been afflicted by labour troubles and banditry, development is continuing and there is a great demand for land suitable for new planting.

The pernicious creeping grass (*llalang*) of Malaya which overran estates during the Japanese occupation presents a constant problem. Wholesale weeding operations are carried out, mostly (right) by the women. The Japanese also destroyed much machinery and equipment, and the oil-palm estates suffered so seriously from their 'attentions' that production of palm oil (extracted from the pericarp) and palm-kernel oil fell from 57,972 and 9,611 tons respectively in 1940 to 11,756 and 932 tons respectively in 1946. Vigorous rehabilitation measures have subsequently been taken, however, the results of which are seen in the 1948 production figures of 45,257 tons of palm oil and 8,471 tons of palm-kernel oil; and production should continue to rise with the improvement of machinery and the maturing of an increasing number of trees.

Below:—A Chinese coolie watering seedlings in a nursery; these are grown in sand prior to being transplanted.

When distances are great, bullock carts (above) are used in Malaya to carry the oil-palm fruit to the estate train (below) which transports them to the factory where oil, immensely rich in food value, is extracted from the pericarp. This palm oil is a butter-like substance, extensively used in the manufacture of soap (wherein its persistent, violet-like odour is noticeable) and candles. Mixed with cottonseed oil and mineral oil, it is widely employed in the tinplate industry for coating iron; it also serves as a lubricant, particularly for railway-car axles — and as a colouring agent for butter substitutes.

Above:—On the factory's upper platform a truck disgorges steamed palm-oil fruit. The drupes readily fall from their stems, which are later used as fertilizer. Below left:—When the pericarp is freed from its hard centre it is fed into a press (right). Pericarp from which the oil has been extracted is disgorged (left) into a shute that takes it to be dried for cattle food. Below right:—An Indian woman sorts nut kernels. These are not processed in Malaya but exported in bulk for extraction of their yellow, fatty oil, which is used in the manufacture of soaps, chocolate products, pharmaceutical preparations and perfumery.



Canada's gain in the Dutch Farm Settlement Plan is not only in farmers from a country whose agricultural skill has become a tradition, but in future citizens like these — some of the ten children of Mr. and Mrs. Jan Van Moorsel.

Dealing in Futures

by JOHN GRAVES

Photographs by Malak

A SCOTSWOMAN who knows Canada well and has lectured on it frequently in the United Kingdom, called to say goodbye to a Canadian friend before leaving for home.

"Each time I come back to this wonderful country," she said, "I find how things have changed! I wonder if Canadians, themselves, realize how fast they are moving. What appeals to me here is the sense of freedom, of unlimited opportunity. Being a young country, you are not afraid to experiment!" What this Scotswoman found in Canada well over 375,000 other people have come looking for since September 1945. These new citizens have been of all ages, types, pasts and professions. By racial origin they represent a dazzling cross-section of human geography. Yet, diverse though they have been they have one compelling motive in common—to trade an old way of life for a new. Man, woman, and child, they are dealing strictly in futures.

So rapidly has new population flowed in during the past two years that even the spring of 1947 now seems remote—remote that is, to all but those whose job it was to provide solutions for the toughest, most intricate administrative problems which the

This young Dutch couple settled down so well that their Canadian employer built an annex on to his own house for them (right rear). All Dutch farm settlers expect eventually to own their farms; through rental or purchase agreements some 600 families have already made a start.

Otto Nicolaj, well-known Latvian illustrator, came to Canada to work as a rigger on the Des Joachims dam and power plant. His skill as a painter is now being employed in making a pictorial record of the huge project as it grows.

Polish scientist Dr. J. W. Meier escaped with his family from Poland just ahead of the Germans in 1939. He now conducts non-ferrous metals research at the Bureau of Mines, Ottawa, where his experience is proving valuable to Canadian research.

A favourite with the children at the Royal Ottawa Sanatorium is Hilda Vari, hospital assistant. A native of Tartu, Estonia, she studied at Tartu University and the Sorbonne; she is now studying in her spare hours to become a high school teacher of languages.

Immigration Service has ever faced. At that time immigration, brought to a standstill by the war, had barely begun to struggle back to life. First and worst bottleneck was transport. European shipping still lay for the most part crippled and disorganized in the harbours. How then did all these people get here? At a time when few Canadian communities are not feeling the effects of this influx of new blood, it is worth looking back to see how, why and whence it came.

On May 1st, 1947, Prime Minister W. L. Mackenzie King laid before the House of Commons the post-war immigration policy which, with Parliament's approval, his Government planned to implement.

> "The policy of the Government," declared Mr. King, "is to foster the growth of the population of Canada by the encouragement of immigration. The Government will seek by legislation, regulation and vigorous administration, to ensure the careful selection and permanent settlement of such numbers of immigrants as can advantageously be absorbed in our national economy."

Thus policy was laid down. Far more complicated was the task of carrying it out, which fell to the Department of Mines and Resources whose Immigration Branch administered the Canadian Immigration Act and Regulations.

Writing in the August 1949 issue of "British Columbia Welfare", H. L. Keenleyside, then Deputy Minister of Mines and Resources and, until January 1950, more closely associated with administration of the immigration program than any other Canadian, excepting Immigration Director A. L. Jolliffe, summarized the problem thus: "The administration of our national immigration policy is by no means a simple or an easy task. By their very nature, human problems are complex and require understanding and mature judgment. It is the aim of those . . . who administer (the program) . . . never to depart from the concept that a man, whatever his race, his creed, his colour, is a human being and entitled to those basic rights and freedoms to which, in international conferences and at home, we pay such frequent and such eloquent homage."

First postwar immigrants from Europe for whom special settlement arrangements were made were 4,500 Poles, veterans of General Wladyslaw Anders's heroic army, who came to Canada to farm.

Justus Viacius, Lithuanian opera singer, is a good illustration of the cross-section of talent which Canada has gained since her Displaced Persons program went into effect.

Badly needed farm help has been provided by more than 7,000 D.P.'s such as this Yugoslavian farmer's son, August Kuk. A law student at home, he hopes to continue in law after his year's farm work.

Numbers of Displaced Persons are working on major construction projects, where they are employed alongside Canadian-born workers. Later on many a former D.P. will be able to point out to his family some great structure and say, "In my first year in Canada I helped to build that!"

Immediately following the Prime Minister's statement the barriers began to come down. Categories of admissible relatives of Canadian citizens were broadened; by successive Orders in Council, provision was made for the admission of the first 5,000 Displaced Persons, a quota later raised to 40,000. Without waiting further on the delays of international discussion, this country took the initiative in moving to relieve the tragic plight of war's grimmest legacy, the politically homeless and the physically dispossessed. Not only was this the first non-European country to take positive action; for many months, thereafter, Canada was admitting more refugees than all other non-European countries combined.

Now that the program has proved itself, it seems fitting that its inception should be recorded. Here was the problem: How best could Canada receive and absorb thousands of men, women and children for whom no forseeable future existed? It was a situation without parallel in Canadian immigration history. Wholly new procedures had to be created capable of providing quick, effective answers to unfamiliar questions. The time was past for red tape and pious hopes. What was needed was a policy so broad—above all so flexible—that the law, without losing its authority, could serve the urgent human need.

Jon Werbowrvizj, 23-year-old Ukrainian is shown how to select the best lumber for venetian blinds by an experienced Canadian-born fellow-worker.

These husky new Canadians represent the thousands who have traded old lives for new. From now on they are dealing strictly in futures —their own and Canada's.

Canadians, at times prone to think that they originate little which has not been first thought of in the United States, may regard their country's handling of the D.P. problem as a notable exception to this false but frequently accepted rule. Here was a situation for which no larger, faster nor more impressive plan of action lay south of the border. Here, in fact, was a case in which the United States still had to decide on any action at all. Canada went ahead.

While the Federal Government negotiated with the International Refugee Organization for the use of ships, Supervising Immigration Officer Odilon Cormier was sent to Germany to set up the first Canadian Immigration Mission to Europe in April 1947.

Working with I.R.O. officials, amidst post-war chaos—lack of transport, lodging, often even of food—Cormier organized Canadian headquarters at Heidelberg and put the first of what later became nine travelling D.P. selection teams into the field. The program, which was to offer new hope and homeland to nearly 100,000 refugees in the two and a half years that followed, had begun to get under way.

Meanwhile, in Canada, the transport jam was being vigorously attacked. To stimulate immigration from the United Kingdom, the Federal Government entered into agreements with the Cunard Donaldson shipping line and Trans-Canada Airlines for provision of air and ocean space on an immigrant-priority basis and at reduced rates. In June the Government of Ontario announced the Ontario Air Immigration Plan which at its termination in March 1949, had brought over 10,600 immigrants from the United Kingdom in some twenty-two months.

To speed up D.P. transport, the Government paid for the conversion of an ex-German prize vessel, the *Beaverbrae*. "The Beaver", has been used mainly to bring over those Displaced Persons whose Canadian relatives applied for their admission. To this latter group, which now numbers more than half the current D.P. total, no quota has ever applied. On quota only are those brought over in response to requests by

Nearly 30,000 D.P.'s are studying English in classes while many others are being taught by relatives. These bush-workers, some of the 4,000 who have been brought over to work in the forest industry, settle down to study. Provincial and community organizations, ethnic and church groups in every large Canadian centre are helping new Canadians to make a quick adjustment to life in their adopted country.

Children from other lands quickly pick up fluent English.

basic industry. Responsibility for their employment, once they reach Canada, is that of the Department of Labour. One important contribution to the D.P. program has been that of the Canadian Christian Council for the Resettlement of Refugees, a voluntary organization which has provided much of the "processing" of D.P. immigrants in occupied Europe who remain outside the mandate of the I.R.O. A further contribution to the program has been that of the Citizenship Branch of the Office of the Secretary of State which worked with provincial and private organizations to assist in speedy assimilation of the newcomers into community life. In January 1950 the federal Department of Citizenship and Immigration was organized to administer both phases of the work.

Concurrently, as the Canadian organization took shape in Europe, the Immigration Service as a whole was being strengthened overseas. New offices were opened. Others, closed during the war, were reopened. Additional staff and more adequate quarters hastened the reception and clearance of intending immigrants. By arrangement with the Department of External Affairs, Canadian Diplomatic Missions handled immigration business in capitals where no offices were then established. In September 1948 regulations were broadened to give citizens of France equality of entry with those of the Commonwealth countries and the United States.

The Canadian instinct for planned experiment that so impressed the Scots visitor (but which Canadians themselves seldom admit), produced a second type of post-war immigration in the Canadian-Netherlands Farm Settlement Plan. Initiated in the spring of 1947, this plan has so far brought

A farmer from the Netherlands goes to work in Canada by the same means he used in the old country.

Between September 1945 and the latter part of 1949, the United Kingdom contributed some 154,000 new citizens to Canada. James Chaplin brought from England the skill of an experienced pattern-maker.

Girls from Lancashire work in an Ontario textile mill. Citizens of Commonwealth countries, the United States and France enter Canada with no more formality than the ability to meet immigration standards of good health, character, and means to maintain themselves until established.

over more than 6,000 Dutch farm families, consisting of over 15,700 persons and it is likely to continue for as long as it benefits both countries as greatly as it has so far done.

The Netherlands farm families, like Displaced Persons, are the victims of war. Military operations flooded large areas of rich Dutch farm-land, wiping out home and livelihood for thousands of experienced agriculturists. In Canada the pull towards urban centres that so many young Canadians have been unable to resist created for the Canadian farmer a serious situation, faced as he was with the need to meet essential food quotas. The Dutch Farm Settlement plan was designed to help both Canadian and Dutch farmers solve contrasting aspects of a basically common problem.

From September 1945, to July 1949, the United Kingdom, traditional source of immigrants for Canada, had contributed 153,961 new citizens. Currently slowed by circumstances for which no single country can be held responsible, the tide of British immigration will rise again. There has been, too, some natural reluctance on the part of Canada to promote any intensive immigrant recruiting in Britain at a time when the United Kingdom stands so gravely in need of the contribution of her best and most productive citizens.

It is doubtful whether the old concept of "immigration", the planless flow of population from one country to another without regard to absorptive capacity and the national standard of living, will ever return. The signs are that it never will nor should. Undoubtedly the record of the past two years, in which thousands of new citizens have been integrated into the Canadian economy with a lack of friction that has surprised even immigration officials themselves, provides a powerful argument for a policy which, retaining its flexibility, combines this with some practical sense of the influences of demand and supply. Not only does such population planning ensure that newcomers can make their most useful contribution with the least delay but that they will find the widest measure of welcome in doing so. The degree of co-operation, for instance, which Canadian Trades Unions have shown towards D.P. workers might have been notably different had not Canadian labour understood from the first that the movement was organized in such a way as to increase Canada's productivity rather than depress her employment levels.

And what of the immigrant himself ? How does his future look to him ?

A Latvian D.P., graduate in agriculture of the University of Riga, wrote to a friend, at the end of two years in Canada, "The first difficulties are all over now and I can only say that in Canada there are unlimited opportunities for everybody not too lazy to work . . . Somebody has said that the twentieth century belongs to Canada . . . there is much truth in this saying, I think!"

A 24-year-old D.P. railroad worker who reached Canada in December 1947 and has since been joined by his parents and younger brother, sent a letter of gratitude to the immigration official who had helped him apply for the entry of his family.

"I would like to try to express a small part of all that gratitude my parents and I are having in our hearts," he wrote. "When they arrived here their eyes have been filled with happy tears as I brought them to the place I had prepared for them in my spare time . . . I think it was one of the greatest moments in the lives of all of us . . . . It's hard to say how much this new life means to my family after five years of homelessness since we have been forced to leave our country in 1944 . . . After long years of scarcity in Europe, Canada seems as a land of a thousand wonders . . . . also it is impossible to put into words what it means to all of us to be together again . . . . I only hope I will succeed to be a good citizen to show all the thankfulness towards this country for the opportunity given me and my family . . . . Our hearts feel far more than I am able to tell about it. I sincerely hope you might understand how endless much all this means to us."

W. V. Crich

SPHINX HAWK MOTH

(Protoparce quinquemaculata)

THE Sphinx Hawk Moth is sometimes called the Hummingbird Moth. It is about the same size as the little bird and often feeds from the same flowers; consequently one is often mistaken for the other. Though most moths are nocturnal, the Hawk Moth (so called because of its strong flight) frequently flies in the brilliant sunlight. The larvae, called tobacco-worms or tomato-worms according to the host, do great damage to these plants.

The Deichmann children look on as Kjeld spins the throwing-wheel.

Canada's Master Potters—
The Deichmanns

by LYN HARRINGTON

Photographs by RICHARD HARRINGTON

WITH THE rolling years, the great rock masses of the earth break down and become dust. Some types of stone decompose into clay. The potter moulds the clay, and through fire, it becomes stone once more, this time in a shape useful and often beautiful.

Leading Canadian craftsmen in this field are the Danish-Canadian potters, Kjeld and Erica Deichmann of Moss Glen, New Brunswick. Dykelands pottery has gone to leading exhibitions including the World Fairs of Paris and New York, and the Glasgow Exhibition. The Museum of New Brunswick has a permanent collection, representative of their work from the beginning.

The pieces turned out at the Dykelands Pottery have that satisfaction to the eye and to the sense of touch that all good pottery possesses. The body of the pottery is a very hard stoneware. Of fundamentally good proportions and lines, the work needs little or no ornamentation. "Substantial, utilitarian and beautiful, Deichmann pottery epitomizes the union of art and craft," one critic phrased it.

The Deichmanns bought their farm in the Kingston Peninsula in 1930. But Kjeld's education had been in wood sculpture and art, rather than agriculture. It was while clearing a drain that he noticed the plastic quality of the clay. This was his medium, he suddenly knew. A year's study in Denmark under an established potter followed. Then the Deichmanns returned to the farm on the Kennebecasis River.

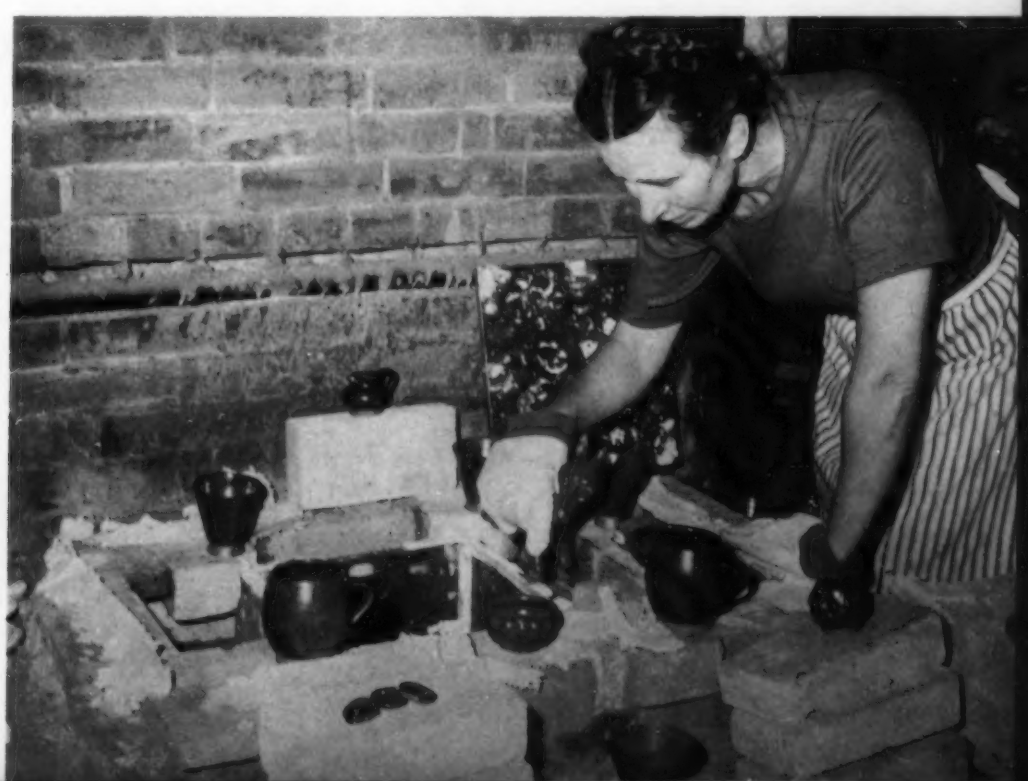
Their success has been due to more than chance. Years of patient study and research have gone into each aspect of their pottery. For some years they used the low-firing local clays. But like other creative potters, they dreamed of going into the field of high-temperature clay with its consequent rare texture. Continued experiments with various clays, fuels and kilns led them to their present use of Musquodoboit blue clay from Nova Scotia. In Danish and English, the results of their experiments fill several thick volumes.

Kjeld shapes each jar, vase, mug or bowl individually on throwing wheels. Erica models strange and unbelievable animals, and does all the glazing. The glaze is that thin coating of glass which not only improves the appearance of pottery, but makes it non-porous and impervious to liquids. Erica has conducted over a thousand separate experiments in glazing—and this without benefit of endowment or research laboratory. She has tried out every formula suited to their clays, and devized a number of her own. Some of her experiments included the use of ashes of different kinds, such as wheat, wood, fern and even cigarette ashes.

Deichmann pottery has been compared to the Chinese pottery of the Sung period, which was characterized by simplicity of form, high quality of body, and hardness of glaze. As in those days, accident still plays a fascinating part in the work of the creative potter, who will sacrifice certainty to the pursuit of beauty and subtlety. In every batch that goes into the kiln is the possibility that some element may produce a new form of beauty. For instance, almost unknown since the end of the Sung period, the rare "purple patch", a blush-red on the cheek of a green jar, has twice appeared in the Deichmann firings.

The forms and glazes produced by the Deichmanns stand as a monument to intense study, something that will outlast their creators. Their work and the results of their experiments will permanently enrich the creative art, for the records, largely secret at present, will be bequeathed to the world, not lost like those of the Sung potters.

Like that ancient ware, Deichmann pottery is meant for the ages. The mystic recombining of the elements of earth, water, air and fire has made the stoneware more lasting than the stone itself.



Erica removes pieces from the kiln after the "glost" or second firing.

EDITOR'S NOTE-BOOK

Douglas Leechman, who lives in Ottawa, was born in London and educated in England, Egypt and Switzerland. After service in World War I he studied anthropology at the University of Washington. Dr. Leechman is archaeologist of the National Museum of Canada, having served in the Division of Anthropology of the Museum for many years. He has spent considerable time in the Yukon on archaeological field trips. Dr. Leechman, whose books and articles are known across Canada, was recently elected president of the Ottawa branch of the Canadian Authors' Association.

* * *

John Graves is a Scottish immigrant who has long been established in Canada, and who became familiar with the Canadian side of the immigration problem during the period covered by the article "Dealing in Futures".

* * *

Lyn and Richard Harrington, wife and husband team of writer and photographer, travel to all parts of the Dominion and record the many aspects of the Canadian scene in story and picture.

* * *

AMONGST THE NEW BOOKS

BOOK REVIEWS BY DOUGLAS LEECHMAN

Six-legged Snakes in New Guinea

by Evelyn Cheesman

(Clarke, Irwin, Toronto, $3.25)

Here are the adventures in a romantic land of an intrepid woman entomologist who obviously enjoyed her experiences there immensely and is eager to share this enjoyment with her readers. That her research work in this little-known district is of first-rate importance there can be no doubt, and one can hardly fail to be impressed by her ability to plan and conduct an expedition single-handed, using totally untrained native boys as her assistants, and facing whatever dangers, real or imaginary, she might encounter. Six-legged snakes exist, fortunately perhaps, only in the imagination of the natives, but they are so real to them that they might just as well be actual.

Miss Cheesman's ability as a collector is apparently somewhat ahead of her skill in writing. She deeply loves a good split infinitive, like "to very strictly supervise", and collects clichés as some do old lace. Another irritating habit is that of using local native expressions without explaining to us stay-at-home landlubbers what they mean. We are assured, for example, that Miss Cheesman's status is "All the same as a sinnabudda only different".

Her sketches are excellent; it is unfortunate that the plates were not better cared for in the press-work.

* * *

Midland England

by W. G. Hoskins

(Clarke, Irwin & Company, Toronto, $3.25)

This, one feels, must have been a difficult book to write. First, there was the task of selection, and that can not have been a light one in a district where there are so many points of interest and beauty. Then there was the even greater difficulty of making the reader see landscapes, churches, halls, and houses which were quite unfamiliar to him and, much more, so to describe them as to retain for each one its individuality and to emphasize the features which distinguish it from its fellows.

The author has succeeded excellently well in his task and one can but envy him his knowledge of the scenes he describes so well. For readers who know the midlands of England, the book must be one of continuous interest and delight. The altogether admirable photographs, most of them by F. L. Attenborough, add much to an already beautiful book. Even a casual perusal shows what a rich and lovely heritage is the English countryside. Its beauty and its charm have survived so many vicissitudes and, it would seem, the end is not yet.

* * *

Bahama Islands

By J. Linton Rigg

(Van Nostrand, Toronto, $10.50)

This beautifully produced book of detailed sailing directions for the Bahamas is another "must" for the yachtsman. It is filled to the covers with useful and practical information based on the personal experience of the author who has sailed these waters many times and has quite fallen in love with this accessible expanse of summer cruising grounds, and they're good in winter too.

The maps and illustrations are good and really helpful, the kind of thing you'll keep at your elbow in the chart room, ready for immediate consultation with an author who can be depended upon to know where to find the best anchorage—and the best rum.

* * *

American Spiders

by Willis J. Gertsch

(Van Nostrand, Toronto, $9.50)

Spiders occupy most parts of the world in quite incredible numbers (a single acre in England was found to have a spider population of two and a quarter million!) yet they have received far less attention than other animal groups of no greater importance.

Dr. Gertsch has tried to remedy the situation by the production of this book and he has succeeded most admirably. The first thing to catch the eye of the

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reader is the truly amazing series of coloured photographs, and those in black and white are hardly less striking.

Readers who will scan the book from cover to cover are few, for there are many details and many references to the technical names of spiders which have no familiar names by which one may recognize them, so that only the most enthusiastic amateur will keep his interest up long enough to read it completely. Nevertheless it is crammed with intensely interesting material including accounts of silk spinning, economic and medical importance, and the quite incredible courtship and mating ceremonies.

* * *

Untold Tales of Old Quebec

by E. C. Woodley

(Dent, Toronto, $3.50)

That there are many strange and fascinating bypaths in the history of Canada is a fact with which most of us are, at least in theory, familiar. Seldom has an author been so successful as has E. C. Woodley in leading his readers along these bypaths and making sure that they enjoy themselves on the way. Just what makes the reading of this book so enjoyable is, perhaps, a little difficult to say. It may be that the author's quiet, unhurried style is responsible, a style which is a pleasant change after some of the works of younger authors, even if it is liable to the reproach of being a bit "old-fashioned".

In reading this collection of well-flavoured tidbits from the historians' table, one wonders occasionally just where fact is finished, and fancy is freed, but the "untold tales" are so evidently the fruit of wide reading and careful research that an atmosphere of authenticity is maintained and the reader will, in nearly all cases, accept the tale as it is here told.

A good bibliography and an index both go a long way to increasing the value of an interesting contribution to the list of good books on Canadian history.

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